

RAS 10415

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before the Administrative Law Judges:
Lawrence G. McDade, Chairman
Paul B. Abramson
Richard E. Wardwell

DOCKETED
USNRC

August 17, 2005 (1:01pm)

OFFICE OF SECRETARY
RULEMAKINGS AND
ADJUDICATIONS STAFF

In the Matter of)

USEC Inc.)
(American Centrifuge Plant))
_____)

Filed August 17, 2005

Docket No. 70-7004

**Motion for Leave to Supplement Replies to USEC and the NRC Staff by
Geoffrey Sea**

Petitioner Geoffrey Sea asks leave to supplement his replies to the Answers of USEC and NRC Staff, which were filed on March 23, 2005, and March 25, 2005, respectively. Original replies to the Answers were filed by the Petitioner on March 30, 2005, and April 1, 2005, respectively.

The reason for supplementation is new information that is detailed in Petitioner's Amended Contentions, being filed concurrently. This new information includes a declaration by three cultural resource experts who completed a visit to the GCEP Water Field site on August 5, 2005. The experts identified a man-made earthwork on the site, crossed by well-heads, just as Petitioner has claimed in prior filings.

TEMPLATE = SEL4 - 037

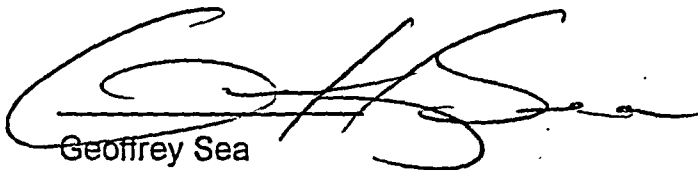
SEL4-02

The new information also includes two parts in a series of articles by Spencer Jakab about USEC's dismal economic prospects, the second published only yesterday, August 15, 2005. It also includes new statements by Bill Murphie, field office manager for DOE with jurisdiction over Piketon, about USEC's unwillingness to reimburse the government for improper expenses identified in a report by the DOE Office of Inspector General, and about the possibility that DOE may seek to recover these costs. Finally, it includes a recent photograph of the Southwest Access Road, showing the proximity and impact of the new gateway on the adjacent Barnes Home.

This new information goes to the heart of many of the Petitioner's contentions, and was not available to Petitioner at the time he filed his original replies.

A Supplement to the Replies is being filed concurrently.

Respectfully submitted,



Geoffrey Sea

August 15, 2005

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Supplement to Replies to USEC and the NRC Staff by Geoffrey Sea

This filing supplements Petitioner Geoffrey Sea's replies to the Answers by USEC and NRC Staff. USEC filed its Answer on March 23, 2005 and Petitioner replied on March 30, 2005. NRC Staff filed its Answer on March 25, 2005, and Petitioner replied on April 1, 2005. The basis for this Supplement is new information that is elaborated in Petitioner's "Amended Contentions," being filed concurrently.

USEC, in its Answer to the Petitioner, relied heavily on two points raised against all of Petitioner's contentions and stated in a preamble "Analysis" on page 20 of its Answer. There USEC argued: "Petitioner goes on at some considerable length to discuss cultural resources in the southern Ohio region.

What Petitioner does not do, however, is ever demonstrate that any of those resources are on the ACP site, or that the ACP will adversely affect those resources in any way. Petitioner also repeatedly criticizes past and present activities of DOE that are beyond the scope of the proceeding..."

Each one of those assertions is now definitively refuted. With his Amended Contentions, attached, Petitioner includes the Declaration by John Hancock, Frank L. Cowan, and Cathryn Long Regarding August 5, 2005 Visit to GCEP Water Field (Exhibit AA). The "GCEP Water Field" is the site along the Scioto River where Petitioner claimed earthworks existed that would be impacted by ACP water pumping. (Petitioner did not originally know the common name of this site, which is also called the X-6609 Raw Water Wells). Cultural resource experts Cowan, Hancock and Long recount their visit to this site on August 5, 2005. (Dr. Cowan is an expert in Hopewell archaeology; Dr. Hancock is an expert in ancient architecture; Dr. Long has spent eight years doing Hopewell cultural studies.) There they did locate and visually assess a definite artificial earthwork of considerable size, right in the midst of the water field. Though the age of this earthwork has yet to be determined with confidence, since only visual inspection has so far been allowed, it definitely predates DOE and USEC activity at the site. Even if the structure turns out, upon analysis, not to be Hopewell, it may very likely have historic significance.

The GCEP Water Field is a part of the ACP site, even though USEC has gone to great lengths to hide and deny that fact. The land of the GCEP Water Field was acquired by DOE, not in 1952 when the diffusion plant was built, but in

1983, as part of planning for a future centrifuge plant on the south part of the atomic reservation. (GCEP is an acronym that stands for Gas Centrifuge Enrichment Plant, the project that evolved into ACP). Production and water use at the diffusion plant—which obtained its water from wells to the northwest of the reservation, were declining when the GCEP Water Field was acquired.

When Petitioner filed on February 28, 2005, he only knew that the water field site in question was owned by DOE and that the water from that field was intended for a centrifuge plant. It is not common knowledge that the "X-6609 Raw Water Wells" were included on the list of facilities leased to USEC in 1993 as part of the package of facilities that would be used to support ACP. (The Lease Agreement between DOE and USEC has been marked "Non-Public, Sensitive" by NRC and thus was not readily available for review. Recent inquiries have revealed that redacted versions of the lease agreement are indeed available, but Petitioner cannot be expected to have originally known this.) The redacted lease agreement, the relevant pages of which are attached as Exhibit CC does indeed list the X-6609 fields.

Petitioner discovered that the GCEP Water Field is leased and managed by USEC only in the process of arranging the expert site visit. To Petitioner's surprise, DOE was unable to grant access to the site without USEC's involvement and approval. Indeed it now appears that DOE canceled the first arranged date for a site visit on July 14, because USEC had not been adequately informed of the arrangements. When USEC did approve and take control of the site visit, USEC imposed restrictions that were never mentioned by DOE—

limiting the number of participants to five (from eight to ten originally) and forbidding any cameras or survey equipment. USEC also provided no maps and no indications as to the site boundaries, as had been requested.

Thus Petitioner, in good faith, originally described the water field as a DOE site, and USEC criticized Petitioner accordingly for being "beyond scope." Lo and behold, USEC knew all along that this was a USEC site, which renders their criticism disingenuous as well as inaccurate.

That disingenuousness is magnified on pages 23 and 24 of the USEC Answer, where USEC attempted to describe the water field in question as something other than what it is. USEC wrote: "The well field was established and used during operation of the GDP... The pumping rates associated with ACP are a small percentage of the design capacity of the well field. .. Nothing in the Petition or either exhibit identifies facts or expert opinions suggesting that there is a significant risk of damage due to such pumping." Each of these statements hides the truth by trickery of tense. Yes the GCEP field was established "during the time" of the GDP, but it was established specifically to supply a future centrifuge plant, then under construction. Yes, the pumping rates are small NOW, but if ACP goes into operation, those pumping rates are planned to greatly increase. Yes, the Petitioner could not cite expert opinion at a time when access to that site was barred—by USEC. Now, limited access was toughly negotiated and the expert opinion is at hand.

In opposing Petitioner's Contention 2 regarding violations of preservation law, USEC was likewise disingenuous. On pages 29 and 30 of its Answer, USEC

argued that Congress exempted the lease transfer of 1993 from the requirements of NHPA Section 106 review by defining the transfer as something other than "a major Federal action." But the lease transfer is not the time when Section 106 requirements would come into play. Section 106 should have been applied when DOE originally seized that land by eminent domain, in 1983—and that is the failure that Charles Beegle complained about in his letter, which was included as an exhibit in Petitioner's first filing. (The letter is reproduced as Exhibit A to the Expert Declaration, attached to the Amended Contentions.) Section 106 kicked in again when USEC selected Piketon as site for ACP, knowing that this would require increased pumping at the GCEP Water Field.

Moreover, because that well field and the associated earthwork are on DOE property, the preeminent requirement is for a Section 110 program, not Section 106. Congress never exempted DOE or NRC from Section 110, which requires ongoing stewardship of archaeological resources on federal land. As the lessee and manager of that property, with a contractual obligation to DOE for executing regulatory oversight responsibilities for its leased facilities (see argument in Amended Contentions), USEC accepted responsibility for executing that Section 110 responsibility for DOE.

Finally, in opposing Contention 7, USEC criticized the Petitioner for failing to cite authority regarding USEC's dismal economic prospects and intractable problems in the DOE-USEC relationship. Petitioner acknowledges that in February these were somewhat speculative, since industry analysts were then only slowly becoming alert to problems that still were only on the horizon. Since

February, however, Petitioner's warnings have received astounding confirmation. In regard to the DOE-USEC relationship, the DOE Office of Inspector General issued a report on March 10, 2005, showing that the line between DOE and USEC on site was so muddled, DOE had improperly paid \$17 million in private USEC expenses in preparing the GCEP buildings for ACP. The IG warned that \$250 million were at risk of suffering a similar fate. On July 14, 2005, Bill Murphie, the DOE field office manager, publicly announced that USEC has made no offer to reimburse the government, and that DOE may consider legal action to recover the improperly paid costs. (For reference, see the Amended Contentions with a Declaration by Geoffrey Sea that contains the full IG report as Exhibit FF.)

Regarding USEC's economic prospects, Spencer Jakab of Dow Jones Newswires has published the first two articles in a series of dire warnings to investors about USEC. The first, titled "Slow Decay," was published in Barron's on May 23, 2005 and it presented a detailed analysis of USEC's vanishing profit prospects, calling USEC's appeal for investors "radioactive." The second, titled "Losing Power" was published yesterday in Barron's. It notes that the May forecasts of doom are being realized, since USEC stock dropped 11.3% in one day on August 4, on news that ACP is delayed for at least six months for undisclosed reasons. The texts of these articles are reproduced in full as an exhibit to the Amended Contentions. These severe economic challenges, combined with possible legal action from DOE to recover past improper taxpayer subsidies of USEC, spell certain problems for USEC in its ability to complete ACP in a competitive industry. Contrary to USEC's assertions that Petitioner did

not show any likely impact of the project, Petitioner has demonstrated that early cancellation of ACP, either before or after licensing and the start of operations, can have severe impacts on the community in terms of lost opportunities for alternative use, saddling taxpayers with USEC's waste clean-up should the company default, irreversible changes to the local scenery and environment, damage to earthworks, and the scaring away of tourists for historic sites including Petitioner's home.

NRC Staff unfortunately bought into many of the same arguments made by USEC, based on a misunderstanding of the USEC-DOE relationship, particularly in regard to the GCEP Water Field site. It is not clear that NRC understood that the GCEP Water Field is leased and managed by USEC, or that the well field was acquired and is intended for supply of water to a centrifuge plant, or that DOE and USEC entered into a contract that binds USEC to exercise regulatory oversight functions for all its leased facilities (not just the GCEP buildings), or that the presence of at least one earthwork on the water field site necessitates the applicability of Section 110 of NHPA, or that DOE has been improperly (and perhaps illegally) paying for USEC private activities at the Piketon site. USEC concealed these facts in all of its filings in this proceeding; it likely also concealed these facts from NRC Staff.

Thus when NRC Staff made the blanket pronouncement, on page 13 of its answer, that "DOE activities are not part of USEC's operations and are not subject to NRC jurisdiction," they were neglecting that some of the "activities" were actually being conducted by USEC on land it leases from DOE, that some

of the "activities" were properly USEC activities improperly being conducted and paid for by DOE on USEC's behalf. To rule all of these activities "beyond scope" would be to encourage improper or illegal behavior—USEC could move contentious issues "beyond scope" by involving DOE in the activity at taxpayer expense—exactly what happened in the case investigated by the DOE Inspector General. It would also negate the regulatory oversight agreement by which USEC accepted responsibilities that were being transferred from DOE to NRC. In short, if all of this is "beyond scope" then everything is forever and always beyond scope. DOE and USEC would then have arranged the perfect public-private scam for evading federal law and we might as well cancel the NRC proceedings here and now.

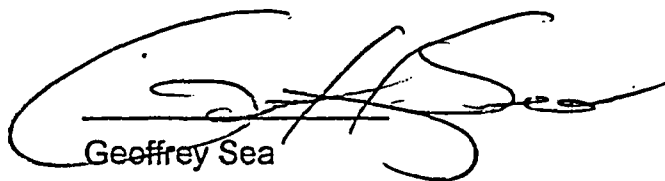
For example, when NRC Staff said on page 15 of their Answer that "Section 110 does not apply" in these proceedings, they obviously were laboring under the misimpression that USEC did not lease and manage the GCEP Water Field as part of the ACP project. To reiterate, Petitioner has never contended that NRC has 110 responsibilities itself in this case. But Petitioner has contended that the failure of the DOE-USEC collaboration to execute 110 responsibilities does place the DOE-USEC lease arrangement in some legal doubt. And so, in conducting a licensing review, NRC would have to be remiss if it did not examine that issue.

There has been lack of clarity by all parties in considering how NHPA compliance responsibilities mesh with the NRC licensing process. This is the inevitable result of the novelty of the situation. An analogy with the more familiar

case of NEPA would here be helpful. Suppose, for the sake of argument, that DOE had completely neglected to conduct any NEPA compliance at all when it originally built the GCEP buildings—no EIS, no hearings, no nothing. Though NRC would not inherit the blame, NRC would certainly be compelled to review the noncompliance as part of its licensing review for ACP. In other words, NRC would have to look at the question of whether DOE default on NEPA compliance places the whole ACP project in jeopardy—making it subject to unforeseen delays, citizen lawsuits, cost overruns for the process of remediating the default, new environmental studies, etc. Both the legality and the viability of the project would be in grave doubt.

We now know that there was a total default in NHPA Section 110 compliance for the Water Field site, an integral part of the ACP project. (Neither DOE nor USEC ever initiated any Section 110 process with the Ohio Historic Preservation Office.) That default (whether by DOE or contractually by USEC can be argued) now subjects the ACP project to unforeseen delays, lawsuits, cost overruns for the process of remediating the default, new archaeological and hydrological studies, etc. Both the legality and viability of the project are in grave doubt. It is actually worse in the case of NHPA compared to NEPA, because NRC will be conducting no Section 110 process of its own that might compensate for DOE's failures. That is why NRC must review the NHPA default as part of its overall licensing review.

Respectfully submitted,



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August 15, 2005

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Amended Contentions of Geoffrey Sea

This filing contains two parts: First, an elaboration of the new bases for contentions, which rely on the new information as will here be presented in exhibits; and, second, justification for the late-filing with reference to Commission rules in 10 CFR 2.309(c).

1

1. Assessment of Cultural Resources

Contention 1.1: USEC has failed to identify cultural resources potentially impacted by the American Centrifuge Plant.

New Basis: In the original petition, Petitioner stated on pages 17-18: "In 1982, the Department of Energy seized by eminent domain a part of this riverfront land from the Rittenour-Beegle estate, including the segmented earthen walls along the river, apparently oblivious to them. DOE (and AEC before it) has used these artificial embankments to shield their wells from flood waters—wells that supply the main atomic site with its water. (See Exhibit B.) The effects of the pumping of water out from under these earthworks has never been studied (See Exhibits B and N)."

A small correction is that while the eminent domain process was initiated in 1982, the land was not actually seized by DOE until 1983. On August 5, 2005, three experts in culture resource assessment—John Hancock, Frank L. Cowan, and Cathryn Long—had the opportunity to visit the riverbank site in question, which is called The GCEP Water Field or the X-6609 Raw Water Wells.

Dr. Cowan is an expert in Hopewell archaeology; Dr. Hancock is an expert in ancient architecture; Dr. Long has spent eight years doing Hopewell cultural studies. The experts have collaborated on a joint declaration that summarizes their findings and is attached as Exhibit AA. At the site they did locate and visually assess a definite artificial earthwork of considerable size, right in the midst of the water field (actually crossing it). Though the age of this earthwork has yet to be determined with confidence,

since only visual inspection has so far been allowed, it definitely predates DOE and USEC activity at the site. Even if the structure turns out, upon analysis, not to be Hopewell, it may well have historic significance. From the declaration:

"10. From the top of this structure, looking in either direction, the structure was dead straight and regularly formed with a consistent width to the level upper surface, unlike the natural levee formations closer to the river and possible remnants of this structure as it presently appears further north. Given the linearity, we all are of the opinion that this is an artificial structure. We cannot say if other earthworks might lie on parts of the site we could not get to. (JH, FLC, CL)

11. Though the structure is man-made, it is impossible to say upon partial visual inspection what this structure is, how old it is (though it is not very recent), or who built it. However, it is within the realm of possibility that the structure is an Indian earthwork of the Middle Woodland period (about 300 B.C. to A.D. 500). The Ohio Hopewell culture of that period built large scale geometric earthworks, including long straight earthen walls; and their constructions once lined the valley of the Scioto River."

It took less than an hour at the GCEP Water Field site for these experts to find this large and apparent earthwork, even though the USEC van dropped them off at the opposite end of the approximately 30-acre site, and even though no maps of the site have been made available. The site has been leased and managed by USEC, in preparation for ACP operation, for twelve years. Yet USEC has never identified the earthwork or admitted its existence to the outside world. USEC mentioned nothing about this earthwork in its Environmental Report, nor has USEC acknowledged the earthwork in these proceedings. This is the clearest example of USEC's failure to identify important cultural resources potentially impacted by ACP.

Contention 1.2 USEC has failed to identify potential impacts of the American Centrifuge Plant on nearby historic and prehistoric sites.

New Basis 1: Petitioner's original petition listed potential impacts unidentified by USEC.

These included, on page 25: "Potential direct damage to the Scioto River earthworks caused by renewed water pumping once ACP is in operation. (See Exhibits B and N.)"

This potential impact is now supported by the expert declaration, which states:

"16. If the [earthwork] structure is determined to have historic significance, an evaluation should be made of the visual and physical impact of the American Centrifuge Project on that structure. DOE well-heads, by the dozen, line both sides of the structure and some are in the midst of it. Whether pumping of water from beneath the structure damages the structure is a question that should be evaluated by hydrology experts. Further surveys of the entire Water Field Site, with maps, cameras, survey equipment, and unrestricted time are also warranted. (JH, FLC, CL)"

17. The GCEP Water Field site lies close enough to the Barnes Works to warrant a close examination of its historic significance. Any prehistoric earthworks that may be identified at that location deserve the utmost attention and protection. Therefore, we urge a program of research at that site as rapidly as possible, in compliance with federal preservation law. (JH, FLC, CL)"

It should be noted that at time of filing, Petitioner did not know that the water field in question was leased and managed by USEC, specifically for use to supply a future centrifuge enrichment plant. In various filings and in the pre-hearing conference, USEC has attempted to mask this fact by making assertions that overall water use on the entire DOE reservation will not appreciably increase. At no time has USEC addressed itself to the present and future pumping rates at this particular well field, nor has USEC presented any evidence that it has studied the potential impact of increased pumping on this earthwork (which it fails to acknowledge). The well heads are dispersed across and in the midst of the earthwork. Potential impacts are obvious and include subsidence; erosion; destruction due to well-head maintenance and grounds keeping; lack of access to the site for cultural resource professionals and the public; aesthetic damage not only from the well-heads themselves but from the pumps, pipes, fences and roads of the

water field. In the absence of evidence to the contrary, we must conclude that USEC has failed to account for these possibilities.

New Basis 2: Judging from Panel questions during the Pre-hearing Conference, there has been some apparent confusion with regard to the Southwest Access Road, which Petitioner originally warned would be reopened, impacting the Barnes Home next to it, where Petitioner lives. At the time of filing in February, the Southwest Access Road, which leads more or less directly from Wakefield Mound Road to the ACP site, had been closed for some years and was grown over with weeds. Petitioner complained about the potential reopening and widening of this road, with resultant traffic, noise and aesthetic impacts upon his property. USEC responded that these concerns were speculative.

Yet, at some time in the early spring of 2005, the road was in fact reopened, and its entrance was festooned with new security barriers, adorned with fluorescent orange decals, new gateposts painted fluorescent yellow, and new road markers in fluorescent orange. All of this—with doubtful approval from any authority on historic colors—is immediately adjacent to the Barnes Home and it pollutes the first view of the Barnes Home one gets when approaching from the north. To show this effect, Petitioner is attaching a photograph taken on August 14, 2005, as Exhibit BB. It shows part of the entrance to the new Southwest Access Road, with the Barnes Home, as viewed from the north on Wakefield Mound Road. It also demonstrates how close the Southwest Access Road is to the Barnes Home, and the need for careful planning for any impact

that changes in that road will have on the home—changes that would be the direct result of ACP.

2. Compliance with federal historic preservation laws.

Contention 2.1: The USEC-DOE collaborative arrangement is out of compliance with the National Historic Preservation Act and related legislation, and **Contention 2.2:** Noncompliance with federal preservation law has undermined the legitimacy and legal basis of the USEC-DOE agreement

New Basis: Section 110 of the National Historic Preservation Act provides for ongoing federal preservation efforts, or “stewardship,” for historic or prehistoric resources on federal land. Specifically, Section 110 (b) [16 USC 470(h)-2b] provides that: “Each Federal agency shall initiate measures to assure that where, as a result of Federal action or assistance carried out by such agency, an historic property is to be substantially altered or demolished, timely steps are taken to make or have made appropriate records, and that such records then be deposited, in accordance with section 101(a) of this Act, in the Library of Congress or with such other appropriate agency has been designated by the Secretary, for future use and reference.”

Since we now know that a historic property exists on the federally-owned GCEP Water Field site (whether it is prehistoric remains to be determined), and since this property was substantially altered with dozens of well-heads and underlying pipe, it is now clear that Section 110 has been violated. (Petitioner has checked with the State

Historic Preservation Office, the Advisory Council on Historic Preservation and the Library of Congress—none is aware of any Section 110 process ever being initiated at Piketon, or of any records being deposited. Petitioner also submitted a written request of DOE on March 10, 2005, asking if DOE has initiated any Section 110 process at Piketon. Despite numerous follow-up requests—verbally and in writing, in public and in private conversations—no reply to the inquiry has come as of this filing.) The question then is: Who is responsible for the violation?

DOE acquired the land in 1983, DOE made the initial site alterations to support a planned centrifuge plant, and DOE is the responsible federal agency under Section 110 of NHPA. That much is clear. However, DOE now claims, in conjunction with planning visits to the GCEP Water Field, that the site is “a USEC site,” leased and managed by USEC, and that, since 1993, USEC has been charged with ensuring regulatory compliance at its leased facilities.

That USEC has leased the GCEP Water Field since 1993 is attested on Page 9 of Exhibit A (Leased Premises as agreed between United States Department of Energy and United States Enrichment Corporation, July 1, 1993), Part 2 (Portsmouth Facilities Leased to USEC), which lists: “X-6609 Raw Water Wells.” (A copy of the Exhibit A Cover Page and Page 9 is attached as Exhibit CC). In USEC latest filing, a Response to my letter of August 11, USEC continues its silence on the matter as to whether it does or does not, in fact, lease the GCEP Water Field. USEC says only, on page 2, that the site of ACP is “approximately 2 miles away from the well fields in question,” meaning to imply that the well fields are unconnected to ACP. This is an extraordinary evasion of plain fact.

USEC would also like to pretend that there is no connection between GCEP—the acronym for Gas Centrifuge Enrichment Plant—and ACP. In fact they are the same project, as evidenced most clearly in the promotional brochure that USEC handed us when we visited the GCEP Water Field Site. That brochure, titled “USEC's American Centrifuge,” (Attached as Exhibit DD) contains, as its first item, a timeline showing the “History of the U.S. Centrifuge...” That timeline contains the following items in direct succession:

- 1977 Government announces plans to construct centrifuge enrichment plant in Piketon, Ohio
- 1985 Gov't cancels centrifuge program
- 1999 USEC begins review of U.S. gov't centrifuge technology
- 2002 USEC, DOE sign agreement, set milestones for operation of American Centrifuge commercial plant

USEC's ACP will occupy the abandoned GCEP buildings and utilize all the supporting GCEP infrastructure, including the GCEP Water Field. Thus, by USEC's own account, the GCEP Water Field could as well be called the ACP Water Field.

The 1993 Lease Agreement between DOE and USEC is silent on the question of compliance with federal preservation laws. However, the Lease does include a “Regulatory Oversight Agreement” (ROA) between DOE and USEC. A review of this agreement makes it clear what happened. Article IV of the ROA contains detailed instructions to the two parties as to the division of responsibilities between the parties for implementation of “the Plan” for transferring nuclear safety and security oversight for USEC facilities from DOE to NRC. Item 4 of Article IV states: “USEC agrees to ensure that the Leased Premises continue to comply with the Nuclear Safety and Safeguards and Security Requirements in Chapter 3 of the Plan during the Interim Period...” (The

Cover Page of the ROA and page 4 containing Item 4 are attached as part of Exhibit CC).

In other words, USEC agreed to carry over regulatory compliance responsibility during the transition period, but this applied only to nuclear safety and security issues under the authority of the Atomic Energy Act and NEPA. NHPA compliance was forgotten; it fell through the cracks. It is clear that USEC interpreted itself as inheriting NHPA compliance responsibility under the lease agreement because it was USEC, not DOE or NRC, that sent formal compliance letters to the Ohio Historic Preservation Office in supposed fulfillment of Section 106 responsibilities for the licensing of ACP. These letters are contained in Appendix B of USEC's Environmental Report, which was originally withheld from public release by a mistake of NRC staff. (Petitioner complained about the absence of Appendix B in his Petition, and it was subsequently mailed to him by NRC Staff.)

We must say "supposed compliance" because, while USEC took responsibility for sending the letters, they do not appear to have taken responsibility for reading the replies from the agencies, or forwarding those replies to DOE for compliance action. USEC received two replies from the Ohio Historic Preservation Office. One, from Dr. Mark Epstein, specifically warned USEC about public concerns regarding potential impacts of ACP on Indian earthworks. (The pages of Appendix B are not numbered in the copy sent to the Petitioner.) Dr. Epstein also cautioned USEC to take these concerns seriously in planning the project, but Dr. Epstein's remark went into the Twilight Zone of DOE-USEC confusion, for they were not even remarked upon in the body of USEC's Environmental Report.

The problem was even more pernicious as regards Section 110 compliance, because Section 110 addresses the agency that owns a historic property—responsibility cannot be transferred to another federal agency. DOE thought that it had shed all of its compliance responsibilities to USEC en route to NRC, but it hadn't. NHPA Section 110 compliance was transferred to that Twilight Zone.

Petitioner and the expert team of cultural resource specialists—originally comprised of about ten members—were transported into this Twilight Zone when we attempted to gain access to the Water Field site, asserting our right under the National Historic Preservation Act to do so. (Petitioner explicitly cited the access rights under NHPA when he first proposed the site visit to DOE in December 2004, and in all subsequent conversations with DOE. He again cited NHPA as the basis for access rights in a telephone conversation with Donald Silverman and Dennis Ross on Wednesday, August 3, in response to the assertion by Messrs. Silverman and Ross that access would be granted only as a "courtesy" by USEC, only under USEC's imposed limitations, and only on a one-time basis.) USEC has stated in its most recent filing of August 10, on page 3, that "Petitioner has no legal right to be granted such a site tour." Petitioner notes that these assertions by USEC amount either to a denial that access rights to cultural resources on federal land exist under NHPA, or to a positive statement that USEC has usurped all NHPA compliance functions from DOE, with its own self-satisfied right to deny that cultural resources exist on the land it leases. The delays in conducting the site visit did result from confusion and disagreement between USEC and DOE about who should conduct it, under whose limitations, and under what legal authority. In the end, both a USEC and a DOE representative accompanied us on the

site visit, but both refused to answer any substantive question about the site, its extent, its history, its function, its legal status, or its documentation.

In response to a Panel question about the specific responsibility of USEC to comply with federal preservation law, Petitioner made reference to Section 112 of NHPA during the Pre-Hearing Conference. Section 112 [16 USC 470h-4(a)] was intended to ensure that professional standards are met by contractors and employees of an agency in carrying out preservation work. Petitioner contended that this provision applied to USEC. Donald Silverman objected, noting that Section 112 mentions "contractors and employees" but not "licensees." Ah, but now it turns out that USEC is not only a licensee—it is also the lessee of the land where the most valuable cultural resources exist on the DOE reservation. A lessee is indeed a type of contractor, especially in this case where the contract of lease contained an agreement for the assigned conduct of regulatory oversight responsibilities.

This is the potency of Petitioner's contention as originally stated. The problem is not with DOE, or with NRC or with USEC singly. The problem is in the DOE-USEC collaborative arrangement, which has not been corrected since 1993. In so far as the DOE-USEC lease agreement fails to provide for compliance with federal preservation law, it is illegal and incomplete. And that situation must be reviewed by NRC as part of the licensing process.

3. Consideration of Action Alternatives.

Contention 3.1 USEC has failed to consider a broad range of alternatives to the proposed action.

New Basis: Petitioner originally suggested in his Petition that if ACP is cancelled, or moved to Paducah, or fails to be licensed, the Piketon reservation would be ripe for a multiplicity of alternate uses. Among those suggested was that forested parts of the 3700 acre reservation could be transferred from the Department of Energy to the Department of Interior, for use as parkland or a wildlife refuge. The feasibility of such a transfer was supported by an expert statement from Roger Kennedy, former director of the National Park Service. USEC, in its Answer to petitioner, belittled such speculation as empty wishful thinking.

Now the idea of a DOE to DOI transfer has received powerful pragmatic support in the US Senate. The Rocky Flats facility is a former DOE production site with far more severe contamination problems than Piketon. On July 25, 2005, Colorado's two US Senators—one a Republican and one a Democrat—introduced legislation that will clear the way to the undeveloped areas of the Rocky Flats site being transferred from DOE to DOI, thus creating the "Rocky Flats National Wildlife Refuge." The developed shops and labs at Rocky Flats will remain as part of the "Rocky Flats Environmental Technology Site." (The press release from Senator Ken Salazar and Senator Wayne Allard is attached as Exhibit EE.)

In essence, this is precisely the mixed alternative use scenario proposed by the Petitioner. The only reason that Piketon is not on track toward site cleanup, environmental restoration, and a mixed alternative use plan as at other closed DOE production sites, is USEC's empty wishful thinking that it can complete and operate the

ACP, a small project that will condemn the whole site to public unavailability. As USEC's economic prospects look increasingly dismal (see Contention 7 below), it appears that all that USEC is accomplishing is to delay Piketon's reclamation and conversion planning by years. Thus, NRC must consider alternative prospects for the entire site in its alternate use scenarios, under both NEPA and NHPA authority.

7. Structure and viability of USEC and of the USEC-DOE relationship.

Contention 7.1: USEC has not clarified the company's stability or long-term prospects, or how its relationship with the Department of Energy is intended to function, or how that relationship might evolve over time.

New Basis: Petitioner's original petition stated: "USEC has been financially unstable, subject to wild fluctuations in its stock price, and the subject of ongoing speculation as to its viability. ... Locally, ACP is sold to the Piketon community as a done deal and a sure bet. On Wall Street and in Washington, there is a growing consensus that ACP is a confidence scheme, intended only to dupe investors long enough to maintain inflated payrolls, while renationalization details are worked out behind the scenes. Surely, NRC must conduct a thorough investigation of USEC's financial, management, and planning practices as part of the licensing process."

Since February, Petitioner's warnings have received astounding confirmation. In regard to the DOE-USEC relationship, the DOE Office of Inspector General issued a report on March 10, 2005, showing that the line between DOE and USEC on site was so muddled, DOE had improperly paid \$17 million in private USEC expenses in

preparing the GCEP buildings for ACP. The IG warned that \$250 million were at risk of suffering a similar fate. On July 14, 2005, Bill Murphie, the DOE field office manager, publicly announced that USEC has made no offer to reimburse the government, and that DOE may consider legal action to recover the improperly paid costs. (See Declaration by Geoffrey Sea, attached as Exhibit FF, with a full copy of the DOE IG's report attached as an exhibit to that.)

Regarding USEC's economic prospects, Spencer Jakab of Dow Jones Newswires has published the first two articles in a series of dire warnings to investors about USEC. The first, titled "Slow Decay," was published in Barron's on May 23, 2005 and it presented a detailed analysis of USEC's vanishing profit prospects, calling USEC's appeal for investors "radioactive." The second, titled "Losing Power" was published Monday, August 15, in Barron's. It notes that the May forecasts of doom are being realized, since USEC stock dropped 11.3% in one day on August 4, on news that ACP is delayed for at least six months for undisclosed reasons. (The texts of these articles are reproduced and attached together as Exhibit GG).

Among the intractable problems facing USEC mentioned by Jakab are these: USEC's large-centrifuge design is untested and must compete against small centrifuges that have decades of operational experience; the most promising market for uranium from ACP is in Asia, but new Asian suppliers of enrichment services can serve these markets much more cheaply; USEC's profit centers are evaporating, including the depletion of a large surplus stockpile of uranium bequeathed to USEC by the government; the agreement for USEC to process Russian uranium at high profit is expiring with no chance for renewal; USEC must soon renegotiate its contract to

purchase electricity, at much higher rates than the existing contract; wild fluctuations in USEC's stock price have put the capital requirements for completion of ACP in jeopardy; USEC's earnings fail to cover the high dividend that USEC has paid in order to attract investors.

These severe economic challenges, combined with possible legal action from DOE to recover past improper taxpayer subsidies of USEC, spell certain problems for USEC in its ability to complete ACP in a competitive industry.

Justification for Non-timely Filing

The NRC regulation covering non-timely filings [10 CFR 2.309(c)] specifies that a petitioner should address the following eight criteria for balancing the admissibility of such filing [here paraphrased]:

- i. Good cause for the failure to file on time.
- ii. The nature of the right to be made a party to the proceeding
- iii. The nature and extent of the petitioner's interests
- iv. The possible effect of any order on those interests
- v. The availability of other means for protecting the interests
- vi. The extent to which the interests will be represented by other parties
- vii. The extent to which participation will broaden the issues or delay the proceedings
- viii. The extent to which participation will assist in developing a sound record.

Petitioner is one of only two petitioners to seek to intervene in this proceeding, and the only petitioner whose primary interests arise from ownership of a historic property that will be impacted by the proposed project. On May 12, 2005, the Commission ruled that Petitioner does have standing to intervene in the proceeding on the basis of this interest, as well as his residential proximity to the proposed project. Since Petitioner is not seeking to enter the proceeding late, and is not adding contentions but is merely adding new bases for contentions on the basis of newly acquired information, some of the admissibility criteria are not applicable. Criteria ii, iii, v, vi, and vii have already been settled by the order of the Commission and by the absence of other parties seeking to intervene to protect historical property interests. Petitioner will therefore review the new information being submitted as support for new bases for contentions, with respect to three criteria: 1) cause for the information being submitted late, 2) possible effect of not admitting the information on Petitioner's interests, and 3) importance of the information for developing a sound record.

Exhibit AA: Declaration of John Hancock, Frank L. Cowan, and Cathryn Long Regarding August 5, 2005 Visit to GCEP Water Field

This is the initial report of a visit to the GCEP Water Field Site, a site owned by DOE and controlled by USEC, on 8/5/05. An initial request was made by the Petitioner to visit the water field site to Bill Murphie, manager of DOE's Portsmouth-Paducah Projects Office, as part of a fulfillment of DOE's obligations under the National Historic Preservation Act at the DOE Semi-annual Environmental Review Meeting on December 2, 2004. Mr. Murphie then agreed to the site visit and offered to personally host it.

Petitioner then followed up on the offer by sending written inquiries to DOE on March 10 and March 17, 2005, asking various questions that sought to clarify DOE's program (or lack thereof) for implementing historic preservation laws. Among these questions, Petitioner asked for the names of DOE officials onsite and at the Kentucky field office who could serve as contacts for Section 106 and Section 110 reviews, including access to sites for cultural resource professionals. Petitioner received no response to these requests. Between March and July, Petitioner spoke numerous times to Laura Schacter, public affairs officer at DOE's PPPO, about receiving contact names and responses to Petitioner's various requests. Each time, Ms. Schacter promised that a reply was forthcoming, but none ever did come.

During this period, Petitioner was unaware that USEC leases the GCEP Water Field and, in fact, controls access to the site. Indeed, there was no way for Petitioner to know this, since USEC has never acknowledged that it leases the site in these proceedings, and since Petitioner's requests to DOE for copies of the DOE-USEC Lease Agreement were repeatedly rebuffed. USEC has still not acknowledged in these proceedings that it leases and controls the GCEP Water Field.

Without knowing that USEC controls the site, Petitioner continued to request access from DOE. As the DOE Semi-annual Environmental Review Meeting again approached in July, Petitioner contacted Bill Murphie directly, to see if he would make good on his original offer. Mr. Murphie did subsequently agree to host a site visit, and a visit for a party of 8-10 professionals was scheduled on the same day of the Review Meeting, July 14, 2005. All arrangements were in place for this visit.

On the afternoon of July 13, only hours before the planned site visit, Petitioner received a phone message from Ms. Schacter, canceling the site visit "due to weather." This seemed to be a transparent excuse for delaying the visit, as the following day, the 14th, it did not rain (not a drop). When Petitioner recontacted Ms. Schacter to reschedule a visit "ASAP," Petitioner was met with a barrage of excuses for why a site visit could not yet be conducted—excuses that made no sense at all, such as that DOE "needed time" to look up the reference to an 1820 archaeological treatise that Petitioner had previously provided.

It was then that Petitioner brought the matter to the attention of the ASLB panel. Following the judges' suggestion that NRC Staff and USEC help facilitate a site visit, Petitioner then received two phone calls—one from a DOE lawyer named Ray Miskelly and one from Donald Silverman. It was only from these phone calls that Petitioner became aware that USEC leases and controls the site, that the visit would have to be conducted by USEC not DOE, and that the site visit would be conducted "as a courtesy" by USEC, to avoid any suggestion that the visit was part of DOE's fulfillment of its obligations under NHPA.

After approximately a week's delay while DOE and USEC "discussed" terms for the visit between themselves, a fourth-choice postponed date of August 5 was agreed to, with the understanding that the visit would proceed under the same arrangements that had been negotiated with DOE. Nonetheless, two days before the scheduled visit, Petitioner received an e-mail from USEC site representative Angie Duduit, changing virtually all of the conditions that had been agreed with DOE. DOE had agreed to a visit of between 8 and 10 individuals; USEC set a maximum of five, after ten had already

been invited and had arranged their schedules accordingly. DOE would have permitted cameras on the site, where there are no security concerns (the site is not even fenced), while USEC forbade cameras.

Petitioner then lodged protests with the Federal Preservation Officer of DOE, the Federal Preservation Officer of NRC, and the Ohio Historic Preservation Office.

Petitioner then received a phone call on the same day, August 3, from Donald Silverman and Dennis Ross. They refused to acknowledge that any right of access under NHPA existed, and they made clear that no site access would be granted in the future by USEC.

Petitioner, along with four of the ten professionals who had signed up for the visit, did then visit the site on August 5. None of our substantive questions about the site were answered, no maps or aerial photos of the site were provided, and the USEC van dropped us off at the opposite end of the site from where the earthworks are most evident. Nonetheless, the three experts on the visit were able to find and visually assess a large artificial earthwork that crosses the well field. That is, they found what USEC did not want us to find.

Dr. Cowen, Dr. Hancock and Dr. Long spent one week writing up their assessments in a joint declaration. Signed copies were sent by FedEx to the Petitioner on Friday, August 12, for Saturday delivery. Unfortunately, an error on the part of FedEx delayed the package, and it was not delivered until the afternoon of Monday, August 15. This delay accounts for why this filing is two days later than Petitioner had promised.

Simply, Petitioner and the experts involved in the assessment made every effort to access the site earlier. We were blockaded at every pass by DOE and by USEC and

by the confusions and miscommunications between them. We could not accomplish the site visit or the written assessment any earlier. If we could have, we would have. If USEC had wanted to complete this process earlier, USEC at any time could have informed us that it controlled the site and was granting us access.

The content of this expert declaration goes to the very heart of Petitioner's contentions and his interests. The earthwork located at the GCEP Water Field is clearly potentially impacted by ACP. Furthermore, it is part of a continuous set of cultural resources that Petitioner seeks to preserve. The earthwork is located on the historic Rittenour estate, proximate to the great ancient Hopewell complex known as the Barnes Works. Petitioner owns the Barnes Home and seeks to restore it and its land as a museum and monument site. Historically, the Barnes and Rittenour families were connected—they had married into each other through the Sargent family. The Barnes Works—originally on the Barnes estate—connected to earthworks on the neighboring Rittenour estate. These families jointly cherished the earthworks in the nineteenth century, and it was for the purpose of viewing these works that then-Congressman Abraham Lincoln was invited to come and stay at the Barnes Home in 1848.

Any order or failure to admit this declaration into the record would severely impede Petitioner's ability to prove his contentions.

Exhibit BB: Photograph of the Part of the Entrance to the Southwest Access Road with the Barnes Home, as seen from the north on Wakefield Mound Road.

This photograph was taken by the Petitioner on August 14, 2005. It shows only a small part of the entrance gateway, as the rest could not fit in the frame. The entrance gateway to the Southwest Access Road has been progressively embellished over the

spring. At dates that are uncertain, fluorescent orange barrier decals were added, and at another uncertain date, the gateposts were painted bright yellow. The orange road markers were added at yet another date. This photo should be considered timely because the road entrance is now in the process of being refurbished, in preparation for the opening of the ACP lead cascade.

This photo most graphically demonstrates the impact of ACP on Petitioner's historic home. Any order or failure to admit this information would restrain the Panel in developing a sound record on the issue of impacts of ACP on historic properties.

Exhibit CC: Excerpts from the Lease Agreement between The United States Department of Energy and the United States Enrichment Corporation, July 1, 1993 (Including page 9 of Exhibit A, "Leased Premises" and page 4 of the Regulatory Oversight Agreement)

Petitioner requested a copy of the DOE-USEC Lease Agreement from DOE in his written requests of March, 2005. DOE did not reply to this specific request. Petitioner then attempted to obtain a copy from the NRC documents office and was informed that the agreement is marked "Non-public, sensitive." It was natural to assume after this reply that no copy would be available until Petitioner has discovery rights. Nonetheless, Petitioner requested that USEC provide a copy of the Lease Agreement in conjunction with the site visit to the GCEP Water Field. USEC did not comply with this request.

Approximately one week ago, Petitioner was informed by a third party that a redacted version of the Lease Agreement was available through NRC under a different document header, from its use in a different proceeding. Petitioner could not have known how to obtain the document earlier without DOE, NRC or USEC coming forth to provide it. Therefore it should be allowed as a non-timely submission.

The excerpts provided demonstrate that USEC has leased the GCEP Water Field since 1993, and elaborate the agreement between DOE and USEC regarding regulatory oversight responsibilities. These matters are central to the issues before the Panel in this proceeding. Since USEC neither admits nor denies that it leases and controls the water field site, admission of these excerpts is necessary for documenting the truth of the matter.

Exhibit DD: "USEC's American Centrifuge," a promotional brochure published by USEC

USEC representative Angie Duduit handed copies of this brochure to all participants at the August 5, 2005, visit to the site of the GCEP Water Field. There is no reasonable way that Petitioner could be expected to have obtained this brochure earlier.

Throughout these proceedings, USEC has attempted to portray a strict separation between DOE's GCEP project and its own ACP project. Yet in its promotional literature aimed at investors and the public, GCEP advertises that the two projects are part of one continuous evolutionary line.

The importance of the distinction lies in the applicability of federal preservation laws to ACP. If ACP is part of the same project, then violations of federal law by GCEP carry over to ACP. This applies to both Section 106 applicability—whether the Section 106 review for GCEP should be reviewable by NRC—and also for Section 110 applicability—whether the failure of DOE to initiate a 110 program for the GCEP Water Field carries over to poison USEC's use of that site to supply ACP.

Any order or failure to admit this information would restrain the Panel in its understanding of the GCEP-ACP relationship, and, more broadly, of the DOE-USEC relationship.

Exhibit EE: Press Release from US Senator Ken Salazar and US Senator Wayne Allard regarding Rocky Flats National Wildlife Refuge, July 25, 2005

The proposal for a Rocky Flats National Wildlife Refuge only became feasible by the introduction of legislation removing an important roadblock on July 25, 2005. Obviously, this information was not available earlier.

This information is essential for supporting Petitioner's contention regarding alternative to the proposed ACP project, and without a full understanding of the alternatives, no rational assessment of ACP can be made.

Any order or failure to admit this information would restrain the Panel in developing a sound record with regard to alternatives to the proposed action.

Exhibit FF: Declaration by Geoffrey Sea Regarding Department of Energy Semi-annual Environmental Review Meeting and the DOE IG Report on USEC (including copy of the IG Report "Gas Centrifuge Enrichment Plant Cleanup Project at Portsmouth)

On March 10, 2005—eleven days after Petitioner filed for intervention—the DOE Office of Inspector General issued a report showing improprieties in the DOE-USEC relationship at the Piketon site, in connection with preparing the GCEP facilities for ACP. The operative meaning of this report was not clear in March, however. USEC could have negated the sting of the report by simply reimbursing DOE for the improper expenditures. Or other DOE offices could have responded to the report, challenging its conclusions.

The operative weight of the report did start to become clear on July 14, 2005, when the Petitioner confronted the DOE field office manager about this report at a public meeting. Only then did it become public knowledge that USEC has made no effort to reimburse the government, and that DOE is weighing its legal options for recovering the improperly paid expenditures from USEC.

Unfortunately, no transcripts of that public meeting are available. Petitioner has therefore submitted a declaration attesting to the conversation that took place, in front of about fifty people. A copy of the full IG report is attached to the declaration.

Consideration of this material is essential for understanding the improprieties of the ACP project, the accelerating problems in the DOE-USEC relationship, and mounting evidence that ACP is not viable as a private project.

Any order or failure to admit this information would restrain the Panel in developing a sound record with regard to these issues, and Petitioner's Contention 7.

Exhibit GG: "Losing Power" by Spencer Jakab, from the 8/15/05 issue of Barron's, with its predecessor, "Slow Decay" by Spencer Jakab, from the 5/23/05 issue of Barron's

On May 23, 2005, Spencer Jakab of Dow-Jones Newswires published a long analytical piece in Barron's that forecasted emergent problems for USEC in terms of raising capital, retaining its profit centers, demonstrating its technology, restraining growth in costs, and financing ACP. However, this was an essentially speculative piece, intended to be followed by an actual report of USEC's performance. That second piece, showing that the prophesied problems have come to pass, was published in Barron's only two days ago, on Monday, August 15, 2005. The new article (which obviously could not have been obtained by Petitioner earlier) references the earlier one, since the

earlier article provides the analytical framework for understanding USEC's troubles.

Petitioner is therefore submitting complete copies of the text of both articles.

These articles together give weight to Petitioner's expressed fear that ACP is really an investment scam, designed to prolong USEC corporate salaries for a few years, while the Piketon site is tied up in a failing project, the end result of which is to destroy historic properties, contaminate the GCEP buildings, allow waste to accumulate, and foreclose possibilities for environmental restoration and alternative use.

Any order or failure to admit this information would restrain the Panel in developing a sound record with regard to understanding the extremely speculative nature and dubious prospects for completion of the ACP project.

Respectfully submitted,



Geoffrey Sea

August 15, 2005

Geoffrey Sea
The Barnes Home
1832 Wakefield Mound Road
Piketon, OH 45661

Tel: 740-289-2473
Cell: 740-835-1508
E-Mail: SargentsPigeon@aol.com

EXHIBIT AA

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before the Administrative Law Judges:
Lawrence G. McDade, Chairman
Paul B. Abramson
Richard E. Wardwell

_____)	Filed August 17, 2005
In the Matter of)	
)	
USEC Inc.)	Docket No. 70-7004
(American Centrifuge Plant))	
)	
_____)	

Declaration by John Hancock, Frank L. Cowan, and Cathryn Long
Regarding August 5, 2005 Visit to GCEP Water Field

Under penalty of perjury, we the undersigned do jointly declare as follows:

Statement of Qualifications

1. My name is John Hancock. I am Professor of Architecture and Project Director of the "EarthWorks Project" being produced by the Center for the Electronic Reconstruction of Historical and Archaeological Sites (CERHAS) at the University of Cincinnati. I am an expert in ancient architectural history and in particular the forms, and the problems of visualization, of these earthen structures. A copy of my curriculum vitae is attached.
2. My name is Frank L. Cowan. I am a consulting archaeologist with the company of F. Cowan & Associates. I am a leading expert in the study and excavation of Hopewell earthwork sites with twenty-five years experience in Hopewell archaeology, including nine years of Hopewell research in Ohio. A copy of my curriculum vitae is attached.
3. My name is Cathryn Long. I am a writer and researcher with the Center for the Electronic Reconstruction of Historical and Archaeological Sites (CERHAS) at the University of Cincinnati. My expertise derives from eight years

interviewing experts on the Hopewell culture for CERHAS. A copy of my curriculum vitae is attached.

Purpose of Declaration

5. The purpose of this declaration is to describe the results of our August 5, 2005, visit to a site near to but not contiguous with the Piketon atomic reservation known as the GCEP Water Field or the X-6609 Raw Water Wells. We went to the GCEP Water Field to examine and evaluate the potential historical significance of earthworks reported to be on the site. As discussed below, we identified a human-made earthwork on the site, whose origin is unknown but which appears to pre-date the U.S. Department of Energy ("DOE") water system which is also visible on the site. We believe that further investigation is warranted in order to determine the origin of the earthworks with confidence. (JH, FLC, CL)

Description of Site Visit

6. The GCEP Water Field lies on the east bank of the Scioto River, due west of the main atomic reservation at Piketon. The Water Field is owned by the DOE and leased to USEC. It is our understanding that the DOE installed a water supply system on the Water Fields site in the early 1980s to supply a future centrifuge enrichment plant. The acronym GCEP stands for Gas Centrifuge Enrichment Plant, a project that later became known as ACP or American Centrifuge Plant. (JH, FLC, CL)

7. Though maps of the GCEP Water Field were requested, they were not provided, and we were not allowed to bring cameras or take pictures. Therefore, we are not able to provide a map or pictorial evidence of our observations and conclusions. Therefore, our observations and conclusions are described solely in narrative form. (JH, FLC, CL)

8. We were dropped off by a USEC van at the northern end of the Water Fields site, and walked towards the southern end, with well-heads evident all along the way. The site extends along the Scioto River, with a forested strip adjoining the river bank, and a cleared strip with a road adjoining that. We observed a DOE water supply system in the area, consisting of DOE well heads which appear as either single pipes coming vertically out of the ground, or groups of four larger pipes arranged in a cross-shape. Most of the well heads line the west side of the road, but many extend into the forested area at irregular intervals. (JH, FLC, CL)

9. The forested strip along the river contains a series of natural levee embankments that parallel the river. However, as we moved south about a half mile, the embankment closest to the road straightened out and became level on top. The further south we moved, the straighter and more level it became, with perfectly uniform width at the level top. The structure continues south as far as

we could see. Because our escorts gave us no maps or clues about the site boundaries, and because we ran short of time, we could not investigate the southern terminus of the structure. (JH, FLC, CL)

10. From the top of this structure, looking in either direction, the structure was dead straight and regularly formed with a consistent width to the level upper surface, unlike the natural levee formations closer to the river and possible remnants of this structure as it presently appears further north. Given the linearity, we all are of the opinion that this is an artificial structure. We cannot say if other earthworks might lie on parts of the site we could not get to. (JH, FLC, CL)

11. Though the structure is man-made, it is impossible to say upon partial visual inspection what this structure is, how old it is (though it is not very recent), or who built it. However, it is within the realm of possibility that the structure is an Indian earthwork of the Middle Woodland period (about 300 B.C. to A.D. 500). The Ohio Hopewell culture of that period built large scale geometric earthworks, including long straight earthen walls; and their constructions once lined the valley of the Scioto River. (JH, FLC, CL)

12. The southern end of the structure we observed at the GCEP Water Field is very close (within a quarter of a mile) of the northern end of the great Hopewell circle-square complex known as the Barnes Works (also called the Seal Township Works or Scioto Township Works). The Barnes Works is listed on the National Register of Historic Places and is one of the large earthworks along the Scioto recorded in 1848 by E.G. Squier and E.H. Davis (*Ancient Monuments of the Mississippi Valley*, Smithsonian). (JH, FLC, CL)

13. It is also possible that the structure is a 19th or 20th century construction, although we are not aware of any major structures that were built in the area during this time. It is unlikely to be a modern levee because there has been no development in this area worthy of such elaborate protection. It is unlikely to be a remnant of the Erie Canal system, because the canal went along the west side of the Scioto River and this structure lies along the east side. It is unlikely to be part of an early pioneer road or railroad because those were built on dry ground to the east, not in the flood zone. (JH, FLC)

14. We believe it is highly unlikely that this structure could have been made by DOE or USEC, because there are trees on either side of it. Neither USEC nor DOE has identified this structure as related to the water field, and it appears unrelated as the structure is most evident at the south end of the site, while the pipes leading to the pump house and road extend from the north end of the site. In addition, it appears that as the structure proceeds north, it actually crosses the well field, which would negate its usefulness as a protective levee. There is also a report from a former land-owner, Charles Beegle, that earthworks at the site predated DOE's acquisition of the land, and that his deceased wife's family, the

Rittenauer family, recognized these earthworks as ancient. This letter from Charles Beegle is attached as Exhibit A. (JH, FLC)

15. A research protocol is needed to determine the identity and age of this structure. That protocol should begin with access to all previous reports of cultural resource investigations conducted at the Water Field property prior to the development of the Water Field, investigations that would have been required by Section 106 of the National Historic Preservation Act. Access will also be needed to the maps and survey records for the Water Field Site in possession of the DOE and USEC. This should be accompanied by historical research to determine if any known engineering work took place in that area prior to the DOE land purchase, and if the structure was noted on any older survey maps or in any archeological works. If the historical research draws a blank, a cross-sectional excavation of the structure and/or a series of soil cores through the structure would reveal much about its age and identity. (JH, FLC, CL)

16. If the structure is determined to have historic significance, an evaluation should be made of the visual and physical impact of the American Centrifuge Project on that structure. DOE well-heads, by the dozen, line both sides of the structure and some are in the midst of it. Whether pumping of water from beneath the structure damages the structure is a question that should be evaluated by hydrology experts. Further surveys of the entire Water Field Site, with maps, cameras, survey equipment, and unrestricted time are also warranted. (JH, FLC, CL)

17. The GCEP Water Field site lies close enough to the Barnes Works to warrant a close examination of its historic significance. Any prehistoric earthworks that may be identified at that location deserve the utmost attention and protection. Therefore, we urge a program of research at that site as rapidly as possible, in compliance with federal preservation law. (JH, FLC, CL)



John Hancock



Frank L. Cowan



Cathryn Long

August 11, 2005

Burkhill Farm
2163 Scottsville Rd.
Charlottesville, Va 22902
27 February 2005

Nuclear Regulatory Commission
To whom it may concern

Re: Piketon, Ohio Centrifuge Operation

As a neighboring landowner, I raise the following concerns about the expansion of the centrifuge operation at the Piketon, Ohio Plant:

1. I own the Scioto Trail Farm on State Route 23. Presently the farm is approximately 370 acres. The major portion is on the west side of State Route 23 and goes to the Scioto River.

2. The farm has been in my wife's family for generations. The Rittenours, Sargeants, and Barnes were influential in the history of the Scioto Valley

From the oral history of the indian culture of the Scioto Valley, stories are told of the indian foot races along the lower portion of the farm. The historic nature of the property should qualify it for the National Historic Registry.

3. During 1966, the NHPA legislation was passed which mandated that government agencies had a moral and legal obligation to weigh the impact that projects have on historic surroundings. The government took 31,421 additional acres for a permanent easement during 1982. This was for a well field along the Scioto and for pipe lines and a road. Never was the NHPA legislation addressed.

4. At one time the farm was over five hundred acres. The DOE took a large portion of the farm during the early 1950's. There was a great projection on

the financial benefits and jobs that would be gained with the nuclear energy project. The only thing that it did was ruin a once beautiful farming valley. There are few, if any, large landowner farmers remaining on their land. From my perspective, the plant has been a detriment and enlarging it will continue that degradation. In the process, it will destroy more Hopewell Indian relics and more of the early history of Ohio will be lost.

5. As an out of state land owner, I was not aware of the enlargement of the centrifuge plant. I would have objected earlier. This letter is written in support of Geoffrey Sea's intervention.

Sincerely
Charles W. Beeple

JOHN E. HANCOCK
Professor of Architecture and Associate Dean
College of Design, Architecture, Art and Planning
University of Cincinnati
Cincinnati, OH 45221-0016

Education:

Master of Architecture (History and Theory), McGill University, 1978
Bachelor of Architecture, *Magna cum Laude*, University of Nebraska, 1974

Academic Experience:

Associate Dean for Research and Graduate Studies, College of DAAP, 2002-present
Director of Graduate Studies in Architecture, University of Cincinnati, 1987-2002
Professor of Architecture, University of Cincinnati, 1993-present
Assistant and Associate Professor of Architecture, University of Cincinnati, 1978-1993
Founding Member, CERHAS (Center for the Electronic Reconstruction of Historical and Archaeological Sites), University of Cincinnati, 1995-present

Selected Scholarly and Professional Presentations:

Refereed Paper: "*The Earthworks Hermeneutically Considered*"
Annual Meeting of the Society for American Archaeology, Montreal, 2004
Premier: "*EarthWorks*" Interactive Museum Exhibit "Little Miami Valley," Cincinnati Museum Center, Cincinnati, OH, July 2003
Invited Guest Lecture Series (6): "Greece and the Greek Temple," New Europe College (Interdisciplinary Post-Doctoral Humanities Institute – Getty funded), Bucharest, Romania, March-April 2003
Premier: "*EarthWorks*" Interactive Museum Exhibit "Mound City"
Hopewell Culture National Historical Park, OH, March 2003
Premier: "The Dirt on Mideia" Interactive Computer Kiosk, DAAP Works, Cincinnati Convention Center, Cincinnati, OH, June 2001 (with UC School of Design)
Invited Guest lecture, "*EarthWorks: Virtual explorations of the Ancient Ohio Valley*," Federal University of Rio de Janeiro, Brazil, March 2000
Refereed Showing: "*EarthWorks: Digital Explorations of Ancient Newark, Ohio*"
ArcheoVirtua Festival, Archeodrome de Bourgogne, Beaune-Tailly, France, 1999
Premier: "*EarthWorks: Digital Explorations of Ancient Newark, Ohio*"
Cincinnati Museum Center Exhibition, Cincinnati, May 1998
Ohio Historical Society, Newark, July 1998, and Columbus, August 1998
Invited Guest Lecture: "*Radical Hermeneutics and the 'Work' of Architecture*"
New Europe College, Bucharest, Romania, 1998
Refereed Paper: "*Radical Hermeneutics and the 'Work' of Architecture*"
Annual Meeting of the Association of Collegiate Schools of Architecture, Seattle, WA, 1995
Invited Panel Participant: "*Genius Loci: Spirit of Place*" Symposium
Aristotle University of Thessaloniki, and Thessaloniki Architect's Association, Thessaloniki, Greece, 1992

Competition Juror, *Lyceum* International Student Design Competition, Moscow, Russia, 1991

Academic Conference Chair: "*Architecture: Back to Life*"

(Conference Theme, Call for Papers, Introductory Remarks), Annual Meeting of the Association of Collegiate Schools of Architecture, Washington, D.C., 1991

Refereed Paper: "Who Put the 'ism' in Classicism?" Annual Meeting of the American Society for Eighteenth Century Studies, Minneapolis, MN, 1990

Invited Guest Lecture: "*Critical Transformation and the Theory of Precedent*" Mellon PhD Symposia, Princeton University, Princeton, NJ, 1986

Selected Publications:

Interactive Multimedia CD-ROM: "*EarthWorks: Virtual Explorations of the Ancient Little Miami Valley*" Cincinnati University of Cincinnati/CERHAS, 2005

Invited Essay: "On Seeing Fort Ancient" in *The Fort Ancient Earthworks*, Columbus, Ohio Historical Society, 2004

Invited Essay: "Native American Architecture of the Midwest" in *Greenwood Encyclopedia of Regional Culture: The Midwest*. Judith Yaross Lee, ed. 2004

Work Featured: (EarthWorks Project) *Cincinnati Enquirer*, *Columbus Dispatch*, *New York Times*, *Wired Magazine*, *Archaeology Magazine*, Gannett News Service, April-August 2003

Book of Collected Essays, *Radical Hermeneutics and the Work of Art* (on architectural theory and interpretation), translated into Romanian, published Bucharest, 2001

Work Featured: *Virtual Reality in Archaeology* (Barcelona Conference 2000), published by Archaeopress, Oxford, 2000

Invited Essay: "On the Greekness of Greek Architecture" for Dimitris Fatouros *Festschrift*, Aristotle University of Thessaloniki, Greece, 1998

Work Featured (computer animations) "Searching for the Great Hopewell Road," 50 min. video documentary, national distribution, Pangea Productions, 1998

Invited Essay: "A Theory of Authority: On Defining the Classical in Architecture" in *The Classicist*, Journal of the Institute for the Study of Classical Architecture, New York Academy of Art, 1994

Invited Essay: "Continuity, Change, and the 'Edges' of Architecture," 75th anniversary "Jubilee" issue of the *Journal of Architectural Education*, vol.40, no.2, Spring-Summer 1987

Refereed Essay: "Between Tradition and History: Notes Toward a Theory of Precedent" *Harvard Architecture Review* 5, Spring 1986

Editor: *History in, of, and for Architecture*, Proceedings of the Symposium "History in Architectural Education," Cincinnati: School of Architecture and Interior Design, 1981

Selected Honors, Awards, Grants, and Contracts:

Contract, Friends of Whitewater Shaker Village (\$10,000), 2005

CERHAS/Interactive Heritage Tourism modeling and media design

National Endowment for the Humanities, Public Programs (\$300,000), 2004

"EarthWorks" traveling exhibit and Website, Implementation Grant

Contract, Ohio River Way (\$7,000), 2004

CERHAS/Interactive Heritage Tourism Website design and development
 National Endowment for the Humanities, Public Programs (\$40,000), 2003
 "EarthWorks" traveling exhibit and Website, Planning Grant
 New York Art Directors' Club (honorable mention) for "The Dirt on Midea," 2001
 (CERHAS collaboration with Graphic Design Senior Class, College of DAAP)
Chris Award (first place, Chris Statuette) for "The Dirt on Midea," 2001
 Columbus International Film and Video Festival
 Contract, National Underground Railroad Freedom Center (\$9,135), 2001
 CERHAS/Interactive Web animations
 George Gund Foundation Grant (\$6,000), 2001
 CERHAS/ "EarthWorks"
 Pre-Selection and Exhibition of "EarthWorks," ArcheoVirtua Festival, Archeodrome de
 Bourgogne, Beaune-Tailly, France, 1999
Chris Award (second place, Bronze Plaque) for "EarthWorks," 1998
 Columbus International Film and Video Festival
 National Endowment for the Humanities, Teaching with Technology (\$127,000), 1998
 "EarthWorks" K-12 multi-media curriculum development
 Ohio Board of Regents Capital Investment Fund Competition (\$900,000), 1997 (with B.
 Britton); "Center for the Electronic Reconstruction of Historical and
 Archaeological Sites"
 U. of Cincinnati Research Challenge Program (\$50,000), 1995 (with B. Britton and P.
 Snadon); "Center for the Electronic Reconstruction of Historical and
 Archaeological Sites"
 National Endowment for the Arts (\$10,000), 1980
 "History in Architectural Education" (National Symposium and Publication)

F. COWAN & ASSOCIATES

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FRANK L. COWAN, Ph.D.

Registered Professional Archaeologist

EDUCATION

Ph.D., Anthropology, State University of New York at Buffalo, 1994

M. A., Anthropology, State University of New York at Buffalo, 1988

B. A., Anthropology, University of Vermont, 1979

QUALIFICATIONS AND RELEVANT EXPERIENCE

Professional Employment History

- 2002- Cultural Resources Consultant, F. Cowan & Associates, Cincinnati, OH**
- 2001-2002 Senior Principal Investigator, BHE Environmental, Inc., Cincinnati, OH**
- 1996-2001 Curator of Anthropology, Museum of Natural History & Science,
Cincinnati Museum Center, Cincinnati, OH**
- 1996 Archaeological Consultant, Pratt and Huth Associates, Williamsville, NY**
- 1995-1996 Site Supervisor, Midwest Archaeological Research Services, Inc., Harvard, IL**
- 1994-1995 Visiting Assistant Professor, Department of Sociology and Anthropology, Loyola
University Chicago**
- 1994, 2001 Archaeological Consultant, Commonwealth Cultural Resources Group, Inc.,
Jackson, MI and Buffalo, NY**
- 1992 Instructor, Department of Anthropology, State University of New York at Buffalo**
- 1991-1992 Archaeological Consultant, Ecology and Environment, Inc., Lancaster, NY**
- 1990-1993 Field Director, University of Chicago Archaeological Field School, Kampsville, IL**
- 1990-1992 Project Archaeologist, Archaeological Survey, State University of New York at Buffalo**
- 1987-1990 Associate Director, Archaeological Survey, State University of New York at Buffalo**
- 1985-1988 Assistant Director, Marian E. White Museum of Anthropology, State University of
New York at Buffalo**
- 1984-1986 Field Supervisor, Rochester Museum and Science Center, Rochester, NY**
- 1979-1984 Field Supervisor, Center for American Archeology, Kampsville, IL**
- 1976-1979 Field Supervisor, Department of Anthropology, University of Vermont**

Doctoral Dissertation

- 1994 *Prehistoric Mobility Strategies in Western New York: A Small Sites Perspective.* Department of
Anthropology, State University of New York at Buffalo.**

Master's Thesis

- 1988 *Technological Activities and Site Use Behavior: An Analysis of Small, Disturbed Sites.* Department of
Anthropology, State University of New York at Buffalo.**

Chapters in Edited Books

- 2006 A Mobile Hopewell?: Questioning Assumptions of Ohio Hopewell Sedentism. In *Recreating Hopewell:
Perspectives on Middle Woodland at the Millennium*, edited by Douglas K. Charles and Jane E.
Buikstra, pp. 49-75. University Press of Florida. In press.**
- 2005 An Ohio Hopewell "Woodhenge": Stubbs Earthworks. In *Ohio Archaeology: An Illustrated Chronicle
of Ohio's Ancient Indian Cultures*, by Bradley T. Lepper, pp. 148-151. Orange Frazer Press,
Wilmington, Ohio.**

- 2004 Earthwork Peripheries: Probing the Margins of the Fort Ancient Site. In *The Fort Ancient Earthworks: Prehistoric Lifeways of the Hopewell Culture in Southwestern Ohio*, edited by Robert P. Connolly and Bradley T. Lepper, pp. 107-124. Ohio Historical Society, Columbus. With T. S. Sunderhaus and R. A. Genheimer.
- 2002 Musical Behaviors and the Archaeological Record: A Preliminary Study. In *Experimental Archaeology: Replicating Past Objects, Behaviors, and Processes*, edited by James R. Mathieu, pp. 25-34. British Archaeological Reports, International Series 1035, Oxford. With Ian Cross and Ezra B. W. Zubrow.

Articles in Peer-reviewed Journals

- 2001 Musical Behavior and the Archaeology of the Mind. *Archaeologia Polona* 39:111-126. With Ezra B. W. Zubrow and Ian Cross.
- 1999 Making Sense of Flake Scatters: Lithic Technological Strategies and Mobility. *American Antiquity* 64(4):593-607.
- 1990 More on Tillage Effects: Reply to Dunnell and Yorston. *American Antiquity* 55(3):598-605. With George H. Odell.
- 1987 Estimating Tillage Effects: Artifact Distributions. *American Antiquity* 52(3):456-484. With George H. Odell.
- 1986 Experiments with Spears and Arrows on Animal Targets. *Journal of Field Archaeology* 13:197-212. With George H. Odell.
- 1980 Artifact Variability at the Multi-Component Winooski Site. *Man in the Northeast* 19:43-55. With Marjorie W. Power and James B. Petersen.

Research Articles in Professional and Avocational Newsletters

- 2003 Up-"dating" the Stubbs Cluster, Sort of.... *The Ohio Archaeological Council Newsletter* 15(2). With Ted S. Sunderhaus and Robert A. Genheimer. http://www.ohioarchaeology.org/cowan_10_2003.html.
- 2002 Dating the Stubbs "Woodworks." *The Ohio Archaeological Council Newsletter* 14(1):11-16. With Ted S. Sunderhaus. Available http://www.ohioarchaeology.org/Nwl14_1.pdf
- 2002 Hopewell Mound 11: Yet Another Look at an Old Collection. *Hopewell Archeology: The Newsletter of Hopewell Archeology in the Ohio River Valley* 5(2):7-11. With N'omi B. Greber. Available <http://www.cr.nps.gov/mwac/hopewell/v5n2/two.htm>.
- 2001 The Smith Site: A Small Hopewell Site Overlooking the Stubbs Earthworks. *The Ohio Archaeological Council Newsletter* 13(2):5-12. With Ted S. Sunderhaus and Rodney Riggs. Available http://www.ohioarchaeology.org/Nwl13_2.pdf
- 1999 Notes from the Field, 1999: More Hopewell "Houses" at the Stubbs Earthworks Site. *The Ohio Archaeological Council Newsletter* 11(2):11-16. With Ted S. Sunderhaus and Robert A. Genheimer. Available http://www.ohioarchaeology.org/Nwl11_2.pdf
- 1998 Notes from the Field: An Update from the Stubbs Earthworks Site. *The Ohio Archaeological Council Newsletter* 10(2):6-13. With Ted S. Sunderhaus and Robert A. Genheimer.
- 1997 Recent Investigations of Fort Ancient's Parallel Walls. *The Ohio Archaeological Council Newsletter* 9:15-19. With Robert A. Genheimer and Ted S. Sunderhaus.
- 1979 Winooski Site Summer Work Turns to the Lab and Reflection. *Vermont Archaeological Society Newsletter* 26:3-6.
- 1978 Shelburne Pond Yields Dugout Canoe. *Vermont Archaeological Society Newsletter* 24:4.

- 1977 History and Present Status of the Ewing Site Investigations. *Vermont Archaeological Society Newsletter* 5(3):3-7.

Book Reviews

- 2000 Review of *Mississippian Towns and Sacred Spaces: Searching for an Architectural Grammar*, edited by R. Barry Lewis and Charles Stout. *American Antiquity* 65(3):590-591.
- 1994 Review of *Cat Monsters and Head Pots: The Archaeology of Missouri's Pemiscot Bayou*, by Michael J. O'Brien. *American Anthropologist* 97(4):31-32.

Published Public Archaeology Reports

- 2005 *The 2003 Wright State University Field School Investigations at the Wright Cycle Shop, 33 MY 801, Dayton, Ohio*. Public Archaeology Report No. 20, Wright State University Laboratory of Anthropology, Dayton, Ohio. With Robert V. Riordan and N. Lee Barrett.

Technical Reports of Cultural Resources Management Investigations

- 1976-2005 Authored or co-authored 57 technical reports for contracted archaeological investigations in Illinois (6), Kentucky (10), New York (28), Ohio (7), and Vermont (6).

Webography

- 1987 Heat-Treating Experiments with Onondaga Chert: Preliminary Results. Electronic document. [Http://wings.buffalo.edu/anthropology/Lithics/Files/thermal.pdf](http://wings.buffalo.edu/anthropology/Lithics/Files/thermal.pdf). Placed on-line in 2000.

Professional Conference Papers

- 2005 Exotic Flakes by the Millions: Results from a Hopewell-aged Knapping Locale in Southwest Ohio. Paper presented at the First Annual Falls of the Ohio Lithics Conference, Louisville, Kentucky. With Robert A. Genheimer and Ted S. Sunderhaus.
- 2005 The Koenig Quartz Deposit at the Stubbs Earthworks Complex, Warren County, Ohio. Paper presented at the spring meeting of the Ohio Archaeological Council, Columbus, Ohio. With Robert A. Genheimer and Ted S. Sunderhaus.
- 2004 Interpreting Ohio Hopewell Earthwork Sites: What Did They Look Like Then? Paper presented at the fall meeting of the Ohio Archaeological Council, Dayton, Ohio.
- 2004 Visualizing Ohio Hopewell Sites: Earthworks or Woodworks? Paper presented at the National Park Service 2004 Summer Lecture Series, Hopewell Culture National Historical Park, Chillicothe, Ohio.
- 2003 Sorting Small Sites: Organizational Roles and Iroquoian Camps. Paper presented at "Current Approaches to the Analysis and Interpretation of Small Lithic Sites in the Northeast," a colloquium at the New York State Museum, Albany.
- 2003 New Information on the Sources and Uses of Hopewell Obsidian in Illinois and Ohio. Paper presented at the 68th Annual Meeting of the Society for American Archaeology, Milwaukee. With Richard E. Hughes and Michael D. Wiant.
- 2002 Earthwork Peripheries: Probing the Margins of the Fort Ancient Site. Paper presented at the Fort Ancient Symposium, Columbus. With Ted S. Sunderhaus and Robert A. Genheimer.
- 2001 Dating the Stubbs "Woodworks." Paper presented at the fall meeting of the Ohio Archaeological Council, Columbus. With Ted S. Sunderhaus.
- 2001 Dating Wooden Architecture at the Hopewellian Stubbs Earthworks. Paper presented at the 47th Midwest Archaeological Conference, La Crosse, WI. With Ted S. Sunderhaus.

- 2000 The Foundation of Music. Multimedia presentation at the 6th Annual Meeting of the European Association of Archaeologists, Lisbon, Portugal. With Ezra B. W. Zubrow and Ian Cross.
- 2000 A Mobile Hopewell?: Questioning Assumptions of Ohio Hopewell Sedentism. Paper presented at the conference, "Perspectives on Middle Woodland at the Millennium," Grafton, IL.
- 2000 Music and Prehistoric Behavior: A Preliminary Analysis. Paper presented at the Annual Conference of the Society for Music Perception and Cognition, Toronto. With I. Cross and E. B. W. Zubrow.
- 2000 "Rapping with the Stones": Lithics and the Origins of Music. Paper presented at the Dorothy Garrod Seminar in Archaeology, University of Cambridge. With Ian Cross and Ezra B. W. Zubrow.
- 2000 "What, No Earthworks?": Mitigation of a Flattened Hopewell Ceremonial Complex. Paper presented at the Office of Environmental Services Archaeology Colloquium, Ohio Department of Transportation, Columbus.
- 2000 Wooden Architecture in Ohio Hopewell Sites: Lessons from the Fort Ancient and Stubbs Earthworks. Paper presented at the 10th Annual Woodland Natural History Conference, Chillicothe, OH.
- 2000 Wooden Architecture in Ohio Hopewell Sites: Structural and Spatial Patterns at the Stubbs Earthworks Site. Paper presented at the 65th Annual Meeting of the Society for American Archaeology, Philadelphia. With Ted S. Sunderhaus and Robert A. Genheimer.
- 1999 The Curation of Archaeological Collections. Paper presented at the Forum on Archaeological Curation, spring meeting of the Ohio Archaeological Council, Columbus.
- 1999 In the Shadow of the Earthworks: Architecture and Activities outside Ohio Hopewell Earthworks. Paper presented at the 66th Annual Meeting of the Eastern States Archaeological Federation, Lebanon, OH. With Ted S. Sunderhaus and Robert A. Genheimer.
- 1998 Ground-Truthing Magnetometry Data at an Ohio Hopewell Site. Paper presented at the 43rd Midwest Archaeological Conference, Muncie, IN. With R. Berle Clay.
- 1996 A House-to-House Search for the Boundaries of the Fort Ancient Site. Paper presented at the fall meeting of the Ohio Archaeological Council, Columbus.
- 1995 Technological Strategies and Mobility: A Small Sites Test. Paper presented at the 60th Annual Meeting of the Society for American Archaeology, Minneapolis.
- 1994 Mobility and Technological Strategies at Small Iroquoian Camps in Western New York. Paper presented at the 34th Annual Meeting of the Northeastern Anthropological Association, Geneseo, NY.
- 1993 Hopewell "Transaction Centers" Revisited: The Mound House Case. Paper presented at the 58th Annual Meeting of the Society for American Archaeology, St. Louis. With Shannon M. Fie.
- 1991 Chert Quarries on the Niagara Frontier: An Iroquoian Example. Paper presented at the 31st Annual Meeting of the Northeastern Anthropological Association, Waterloo, Ontario. With Thomas Fletcher.
- 1990 Technological Activities and Site Use Behavior: A Study of Small Plowzone Flake Scatters. Paper presented at the 30th Annual Meeting of the Northeastern Anthropological Association, Burlington, VT.
- 1990 Tools Away from Home: An Examination of Tool Discard Patterns at Foraging Locations. Paper presented at the 30th Annual Meeting of the Northeastern Anthropological Association, Burlington, VT.
- 1987 Tillage Damage to Lithic Artifacts: Experimental Results. Paper presented at the 27th Annual Meeting of the Northeastern Anthropological Association, Amherst, MA.
- 1979 Artifact Variability at the Winooski Site. Paper presented at the 19th Annual Meeting of the Northeastern Anthropological Association, Henniker, NH. With Marjorie W. Power and James B. Petersen.

University Classroom Teaching

- 1994-1995 **Visiting Assistant Professor**, Loyola University of Chicago
Anthropology 101, "Human Origins"
Anthropology 104, "Humans and Their Natural Environments: Past and Present"
Anthropology 360, "Hunters and Gatherers: Archaeology and Ethnography"
Anthropology 360, "North American Archaeology"
- 1992 **Instructor**, State University of New York at Buffalo
Anthropology 108, "Exploring Our Archaeological Past"
- 1985-2005 **Guest Instructor**, Buffalo State College, Canisius College, Cincinnati State Community College, College of Mount Saint Joseph, Fredonia State College, Niagara County Community College, Northern Kentucky University, State University of New York at Buffalo, University of Cincinnati, Xavier University.
- Guest lectures on North American archaeology, regional prehistory, world prehistory, Hopewellian studies, lithic technologies, and experimental archaeology.

Archaeological Field School Teaching

- 1990-1993 **Field Director**, University of Chicago, Chicago, IL.
Directed field investigations and taught archaeological method and theory to graduate and undergraduate students at the Hopewellian Mound House site in the lower Illinois River valley. The nine-week curriculum included "Archaeological Field Methods", "Archaeological Theory and Research Design", and "Anthropology and the Natural Sciences".
- 1986 **Field Supervisor**, Rochester Museum and Science Center, Rochester, NY.
Taught an NEH-funded six-week high school field school at two proto-historic Iroquois villages.
- 1982-1984 **Staff Archeologist**, Center for American Archeology, Kampsville, IL.
Taught year-round field school programs for junior/senior high, college, and adult students. Supervised excavations of a Mississippian village site and taught specialized courses in lithic technologies.

Museum Curation, Programs, and Exhibits

- 1996-2001 **Curator of Anthropology**, Museum of Natural History & Science, Cincinnati Museum Center.
Directed all functions of the Anthropology Department, including administration, research projects, curation of archaeological and ethnographic collections, and staff and docent activities. Advised the museum's exhibits and education departments about all exhibits and public education programs with anthropological content. Provided archaeological and anthropological knowledge and expertise to local and regional organizations and private individuals.
- 1988, 1990 Invited demonstrator in "Stone Tool Craftsmen of America", a biennial program featuring North American master flintknappers at the Buffalo Museum of Science.
- 1985-1988 **Assistant Director**, Marian E. White Museum of Anthropology, State University of New York at Buffalo.
Managed and curated the university's archaeological and ethnological collections. Coordinated use of research facilities and collections.
- 1984 Taught workshops in prehistoric lithic technologies at the Rochester Museum and Science Center.
- 1984 Prepared exhibit of lithic technologies at the Rochester Museum and Science Center.
- 1984 Prepared permanent exhibit of lithic technology at the Buffalo Museum of Science.

Advisory Boards and Adjunct Positions

- 2003-Present **Archaeological Advisor**, Kentucky Educational Television, Frankfort, Kentucky.
Archaeological advisor for a three-episode video-documentary series of the prehistory and history of northern Kentucky.
- 2002-Present **Adjunct Research Associate**, Cincinnati Museum Center, Cincinnati, Ohio.
Collections research; advisor for the museum's archaeological research and exhibit programs.
- 1999-Present **Archaeological Advisor**, Voyageur Media Group, Inc., Cincinnati.
Scientific advisor for a three-episode video-documentary series, popular-style book, and educational web site about Ohio archaeology. Production researcher for all culture-historical timelines and site location maps.
- 1999-2002 **Adjunct Research Associate**, Department of Anthropology, University of Cincinnati.
- 1996-Present **Archaeological Advisor**, Center for the Electronic Reconstruction of Historical and Archaeological Sites (CERHAS), University of Cincinnati.
Scientific advisor for "Earthworks: Digital Explorations of the Ancient Ohio Valley," an interactive, educational multi-media museum exhibit, DVD and web-based project featuring digital, virtual-reality reconstructions of Adena and Hopewell earthworks.

Funded Grant Proposals and Research Donations

- 2002 Anonymous private donor. Archaeobotanical analyses and radiocarbon dates - \$5,400
- 2000 Central Ohio Valley Archaeological Society. Radiocarbon date - \$305
- 1999 Fleischmann Foundation. Stubbs Earthworks excavations - \$6,000
- 1999 Anonymous private donor. Radiocarbon date - \$250
- 1998 Gray & Pape, Inc. Stubbs Earthworks excavations - \$5,000
- 1998 3D/International, Inc. Stubbs Earthworks excavations - \$2,000
- 1991 Mark Diamond Research Fund, Graduate Student Association, State University of New York at Buffalo.
Radiocarbon dates - \$1,050

Professional and Avocational Archaeological Organizations

- Central Ohio Valley Archaeological Society (President 2001-2003)
- Illinois Archaeological Survey
- Midwest Archaeological Conference (founding member)
- New York Archaeological Council (Board of Directors 1992-1994)
- Ohio Archaeological Council (Board of Trustees 1999-2002)
- Register of Professional Archaeologists
- Society for American Archaeology (Nominating Committee 2000-2001)
- Vermont Archaeological Society (Board of Trustees 1977-1979; President of Burlington Chapter 1976-1979)

Current Research and Writing Projects

- Hopewellian Middle Woodland subsistence and settlement systems in Ohio and Illinois.
- Human cognitive evolution in the archaeological record (Visiting Scholar, University of Cambridge, 2000).
- Late prehistoric/protohistoric archaeological record.
- Lithic technologies, world-wide.
- Organizational roles of small Iroquoian sites.
- Paleoindian lithic technologies.
- Production technology and organizational roles of Hopewell bladelets.
- Spatial structure, function, and architecture at Hopewellian sites.
- Technological organization of small sites and foraging locations.

Cultural Resources Management

- 2002- **Cultural Resources Consultant**, F. Cowan & Associates, Cincinnati, OH
Sole proprietor; archaeological investigations in Kentucky and Ohio and subcontracted lithic analyses.
- 2001-2002 **Senior Principal Investigator**, BHE Environmental, Inc., Cincinnati, OH
Archaeological investigations in Ohio.
- 1996 **Archaeological Consultant**, Pratt and Huth Associates, Inc., Williamsville, NY.
Lithic and spatial analyses and technical report writing about prehistoric sites in New York.
- 1995-1996 **Site Supervisor**, Midwest Archaeological Research Services, Inc., Harvard, IL.
Directed fieldwork, laboratory, and report writing of a historic and prehistoric site in Illinois.
- 1994, 2001 **Archaeological Consultant**, Commonwealth Cultural Resources Group, Inc., Jackson, MI and Buffalo, NY.
Lithic and spatial analyses and technical report writing about prehistoric sites in New York.
- 1991-1992 **Archaeological Consultant**, Ecology and Environment, Inc., Lancaster, NY.
Artifact analyses and intrasite spatial analyses for sites across Louisiana and Mississippi.
- 1990-1992 **Project Archaeologist**, The Archaeological Survey, State University of New York at Buffalo.
Directed site testing and major excavations in western New York. Developed research designs, directed implementation, analyses, and reports.
- 1988 **Archaeological Consultant**, Tonawanda, NY.
Conducted archaeological survey of the Town of Canaan, VT Community Park.
- 1987-1990 **Associate Director**, The Archaeological Survey, State University of New York at Buffalo.
Directed and administered the University at Buffalo's cultural resource management service. Prepared contract proposals and budgets, developed research designs, coordinated projects, supervised project implementation, data analyses, and report preparation.
- 1984-1986 **Field Supervisor**, Rochester Museum and Science Center, Rochester, NY.
Conducted archaeological investigations in central New York, including major excavations of an Iroquoian fishing camp and of a large 19th-century alms-house cemetery.
- 1979-1983 **Field Supervisor**, Center for American Archeology, Kampsville, IL.
Conducted regional site survey and site testing studies and supervised major excavations at two Hopewellian Middle Woodland sites, Smiling Dan and Napoleon Hollow.
- 1979 **Laboratory Director**, Center for American Archeology, Kampsville, IL.
Directed laboratory analyses and curation of artifacts and records for site testing investigations in Illinois.
- 1978-1979 **Site Director**, Department of Anthropology, University of Vermont.
Directed excavation and analyses of the deeply stratified Woodland-period Winooski site.
- 1976-1978 **Field Supervisor**, Department of Anthropology, University of Vermont.
Directed survey and testing projects in Vermont.

CATHRYN J. LONG

Writing and Curriculum Development

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email: cjlong2@yahoo.com

Publications

BOOKS

- The Agricultural Revolution* (nonfiction, grades 6-12), Lucent Books, 2004.
Westward Expansion (nonfiction, grades 4-8), Kidhaven Press, 2003.
Ancient America (nonfiction, grades 6-12), Lucent Books, 2002.
The Cherokee (nonfiction, grades 6-12), Lucent Books, 2000.
Crossword America: The Fifty States and *Crossword America: The Presidents* (middle grades history with crossword puzzles), Lowell House Juvenile/Contemporary Books, 1999.
Crossword America: American History to 1900 (middle grades history with crossword puzzles). Lowell House Juvenile/Contemporary Books, 1998
Ohio: Past and Present (middle grades history and activities with laminated map; separate teacher's guide). Graphic Learning/Abrams and Co., Publishers, Inc., 1996.
The Middle East in Search of Peace (secondary level). Millbrook Press, 1994; Revised Edition, 1996.
Civics: Citizens in Action (ninth grade textbook). Merrill Publishing Co./McGraw-Hill, 1986; Revised Edition, 1990, with Mary Jane Turner, Elizabeth J. Lott, and John S. Bowes.
The Future of American Government (secondary level book). Allyn and Bacon, 1978, with Rudie W. Tretten.

PUBLIC PRESENTATIONS

Writing, research, and educational consultation, *EarthWorks: Virtual Explorations of the Ancient Ohio Valley*, a computer based project focused on ancient Indian earthworks; sponsored by the Center for the Electronic Reconstruction of Historical and Archaeological Sites, University of Cincinnati; begun 1997 and in progress 2005. Publications to date include:

- EarthWorks: Virtual Explorations of the Ancient Mid-Scioto Valley*, an educational interactive video program currently running at Hopewell Culture National Historical Park, Chillicothe, Ohio.
EarthWorks: Virtual Explorations of the Ancient Little Miami Valley, an educational interactive video program currently running at the Cincinnati Museum Center, Cincinnati, Ohio.

Writing and all research, including visuals, for the Riverboat Age exhibit installed along Cincinnati's waterfront for the 1988 city bicentennial Tallstacks festival (exhibit re-installed for subsequent Tallstacks festivals in 1991, 1995, 1999).

Script and location of visuals for *Out on the Town with Taft*, a play about Cincinnati history for young people. Produced jointly by the Public Library of Cincinnati and Hamilton County and the Junior League, and presented in the library theater for visiting classes, 1983.

LESSONS AND OTHER EDUCATIONAL MATERIALS

Lessons and updates for *The World: Lands and Peoples* (sixth grade student activity book, map, and teacher's guide). Graphic Learning/Abrams and Co., Publishers, Inc., Revised Edition, 1992.

Textbook writing and development of activities in world history, U.S. history, and geography, grades 6-12 for Learning Design Associates, Columbus, Ohio, 1986-1990.

Textbook writing (fifth grade U.S. history) for Ligature, Inc., Chicago, Ill., 1989.

Co-author and editor, with Fred R. Czarra, of *Teaching About World Hunger: Facts, Activities, Resources*, a special edition of *Social Studies*, 74:4 (July/August, 1983).

Three secondary level units for teachers preparing students for field trips to Boston, Washington, and New York: National Education Association Travel Service, 1981.

With David C. King, *Teacher's Guide to Great Decisions*, Foreign Policy Association, New York, 1981 and 1982.

A Teacher's Guide to U. S. History (listing of useful nonfiction and fiction titles for secondary teaching), prepared for Dell Publishing Co., 1979.

As writer and editor for Global Perspectives in Education, Inc., New York, NY, 1975-1979, I worked closely with teachers in developing and testing curriculum. My published work included articles in *Intercom*, the journal of GPE, and lessons at all grade levels on topics of history, world affairs, culture studies, environment, and citizenship.

Education

B.A., 1968, and all work for the Ph.D. in English except the dissertation, 1975, University of California, Berkeley; Associate, teaching English composition, 1973-1975.

Service

Volunteer tutor in English and Social Studies, Cincinnati Public Schools, 1990-2005
Founding Committee and Vice Chair, U-Kids (University of Cincinnati Infant Care Center), 1980-82

EXHIBIT BB

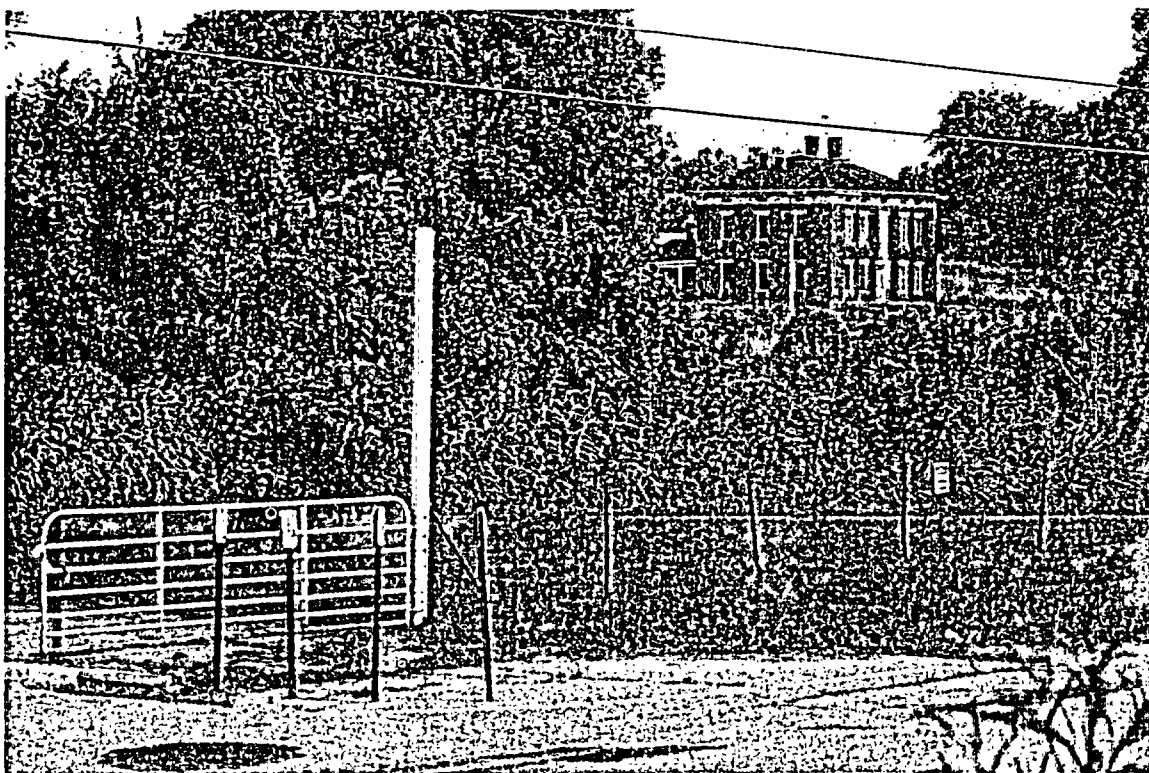


EXHIBIT CC

LEASE AGREEMENT
BETWEEN
THE UNITED STATES DEPARTMENT OF ENERGY
AND
THE UNITED STATES ENRICHMENT CORPORATION

DATED AS OF JULY 1, 1993

EXHIBIT A

LEASED PREMISES

as agreed between

UNITED STATES DEPARTMENT OF ENERGY

and

UNITED STATES ENRICHMENT CORPORATION

July 1, 1993

**PORTSMOUTH FACILITIES
Leased To USEC**

<u>FACILITY</u>	<u>DESCRIPTION</u>
X-2220D	Telephone System
X-2220L	Classified Computer System
X-2220N	Security Access Control and Alarm System
X-2230A	Sanitary Water Distribution System
X-2230B	GCEP Sanitary Sewers
X-2230C	Storm Sewers
X-2230F	Raw Water Supply Line
X-2230G	Recirculating Water System
X-2230H	Fire Water Distribution System
X-2230J	Liquid Effluent System
X-2230M	Holding Pond Number 1
X-2230N	Holding Pond Number 2
X-2230T	Recirculation Heating Water System
X-2232A	Nitrogen Distribution System
X-2232B	Dry Air Distribution System
X-2232D	Steam and Condensate System
X-2232G	Supports for Distribution Lines
X-3000	Electronics Maintenance Building
X-5000	GCEP Switch House
X-5001	Substation
X-5001A	Valve House
X-5001B	Oil Pumping Station
X-5015	HV Electrical System
X-6000	GCEP Cooling Tower Pump House
X-6001	Cooling Tower
X-6001A	Valve House
X-6609	Raw Water Wells
X-6613	Sanitary Water Storage Tank

REGULATORY OVERSIGHT AGREEMENT

between

UNITED STATES DEPARTMENT OF ENERGY

and

UNITED STATES ENRICHMENT CORPORATION

THIS AGREEMENT, entered into as of this 1st day of July, 1993, by and between the UNITED STATES OF AMERICA (hereinafter referred to as the "Government"), represented by the SECRETARY OF ENERGY (hereinafter referred to as the "Secretary"), the statutory head of the DEPARTMENT OF ENERGY (hereinafter referred to as "DOE"), and the UNITED STATES ENRICHMENT CORPORATION (hereinafter referred to as "USEC");

WITNESSETH THAT:

WHEREAS, until the Nuclear Regulatory Commission ("NRC") issues a Certificate of Compliance to USEC or approves a Compliance Plan pursuant to Section 1701 of the Atomic Energy Act of 1954, as amended ("AEA"), the DOE is required (to promote and protect the radiological health and safety of the public and workers and to provide for the common defense and security at DOE-owned facilities by exercising nuclear safety and safeguards and security oversight authority at the Leased Premises) as defined in the Lease Agreement between DOE and USEC dated as of July 1, 1993 (hereinafter referred to as the "Lease");

NOW, THEREFORE, the parties hereto agree as follows:

ARTICLE I - DEFINITIONS

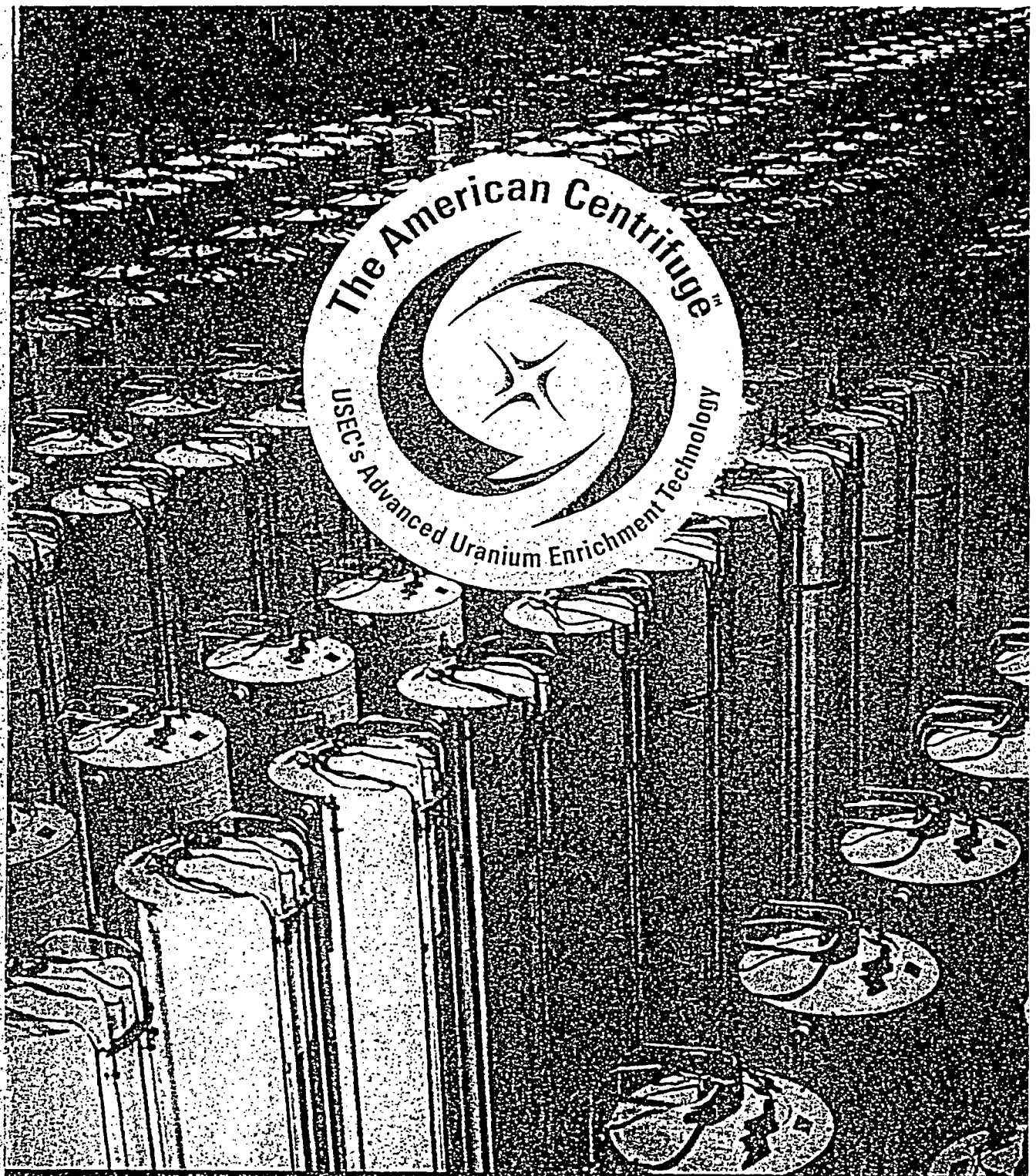
As used throughout this agreement, including the appendices hereto, the following terms, when capitalized, mean:

1. The term "Appraisal Team Member" means a DOE safety and health or safeguards and security professional supporting DOE Nuclear Safety and Safeguards and Security Requirements oversight activities.
2. The term "Civil Penalty" means a monetary penalty that may be imposed for violation of Nuclear Safety and Safeguards and Security Requirements.
3. The term "Clear And Present Danger" means a condition or hazard that could be expected to cause: (a) either death or serious harm to plant workers or the public, or (b) serious damage to the common defense and security.

Requirements in the Plan and summarize the current status of conformance of the Leased Premises with the Nuclear Safety and Safeguards and Security Requirements as set forth in the portions of Chapter 3 entitled "Status of Conformance." The applicable portions of the DOE Orders which are referenced in Chapter 3 of the Plan provide additional guidance concerning the implementation measures that would enable the Leased Premises to meet the Nuclear Safety and Safeguards and Security Requirements.

4. USEC agrees to ensure that the Leased Premises continue to comply with the Nuclear Safety and Safeguards and Security Requirements in Chapter 3 of the Plan during the Interim Period through the continuation of the policies, procedures, practices, and other implementation measures described in the Plan. USEC agrees to impose this commitment on the contractor operating the Leased Premises on behalf of USEC and include appropriate provisions in the contract for the operation of the Leased Premises to provide further assurance that USEC and the operating contractor will continue to meet this commitment. USEC further agrees, as part of the Oversight Program, to undertake the self-assessment activities described in the Plan with respect to the Nuclear Safety and Safeguards and Security Requirements; cooperate with DOE in the inspections, reviews, and other activities conducted by DOE in accordance with the Oversight Program; and implement or cause its operating contractor to implement corrective or preventive actions as a result of these assessments, inspections, reviews, and other activities.
5. A. DOE has determined that DOE's regulatory oversight of the Leased Premises during the Interim Period, including all of the self-assessments, inspections, reviews, and other activities described in the Oversight Program, will be coordinated by the DOE Regulatory Oversight Manager. The DOE Regulatory Oversight Manager will have the authority to modify the Nuclear Safety and Safeguards and Security Requirements set forth in the Plan, including the authority to make additions or deletions to these requirements, if the DOE Regulatory Oversight Manager determines that the additional requirement is necessary to protect the public health and safety or to provide for the common defense and security, or the deleted requirement is no longer necessary to protect the public health and safety or to provide for the common defense and security in connection with the operation of the Leased Premises.

EXHIBIT DD



USEC's AMERICAN CENTRIFUGE

Enriching fuel for nuclear power plants

History of the U.S. Centrifuge...

1941
University of Virginia researchers conduct first known separation of uranium isotopes using centrifuge technology

1960
U.S. gov't begins R&D on centrifuge enrichment technology

1961
First cascade operates successfully

1975
Centrifuge Test Facility (CTF) begins operation

Gov't centrifuge enrichment technology

The world needs nuclear energy. A billion people on five continents count on electricity generated by nuclear energy to light and power their homes, businesses, hospitals and schools. As the world's leading supplier of nuclear power plant fuel, USEC Inc. is investing in a new technology to meet the energy demands of a growing planet. USEC is developing the American Centrifuge.

A RELIABLE AND COMPETITIVE FUEL SOURCE FOR THE WORLD

Based on a classified U.S. government design, the American Centrifuge is expected to be the world's most efficient nuclear fuel technology. The Department of Energy invested more than \$3 billion over two decades to develop and prove the technology, achieving outstanding results. However, tightening budgets and reduced energy demand prompted DOE

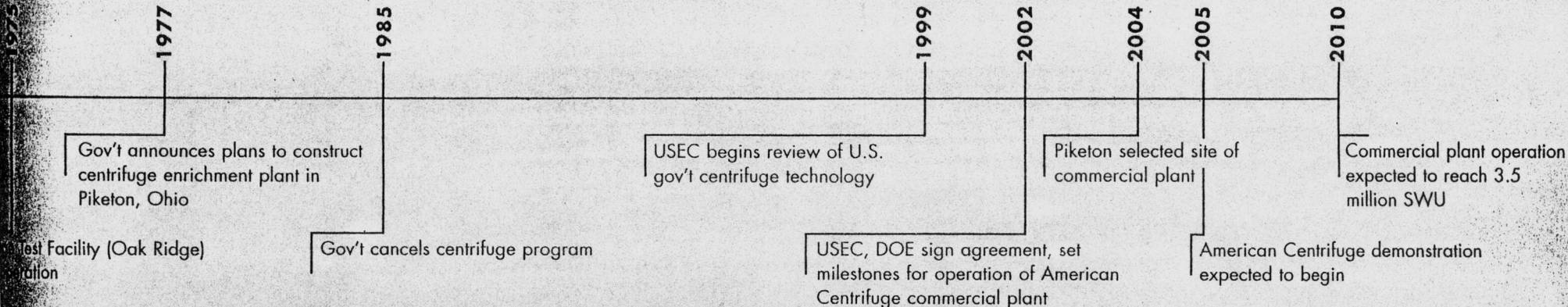
to halt the program in 1985. Now, a new era presents new opportunities. By the end of the decade, USEC plans to build and operate a commercial American Centrifuge plant to provide a reliable and competitive source of enriched uranium fuel for the world's nuclear power plants.

A Technology For Tomorrow

Rising demand and concerns about electricity reliability and clean air signal new opportunities for nuclear power and fuel technologies, like the American Centrifuge. Nuclear power is one of the world's leading energy sources that doesn't emit harmful greenhouse gases that contribute to global warming. With more than 60 reactors either under construction or in the planning stages worldwide, the nuclear fuel market must be able to serve that growth.

What is Uranium Enrichment?

Uranium enrichment is a key step in transforming natural uranium into nuclear fuel. Mined from the earth, uranium contains mostly U-235 and U-238 isotopes. Only the U-235 isotope is useful in making fuel. Enrichment increases the concentration of U-235 and decreases the



electricity
new
fuel
centrifuge.
leading
harmful
global
either
stages
must be

USEC is developing the American Centrifuge under a cooperative agreement with DOE's contractor, UT-Battelle, leveraging the department's multi-billion-dollar investment and a strong existing infrastructure. The original DOE design remains, but USEC is making improvements. Employing modern materials, control systems and manufacturing processes will enable the Company to reduce costs and improve the design's overall efficiency.

Demonstrating the Technology

Before constructing a commercial plant at a cost of up to \$1.5 billion, USEC will first operate a plant prototype, the American Centrifuge Demonstration Facility, in Piketon, Ohio. The purpose of the prototype is to demonstrate the technology's efficiency and produce cost, schedule and performance data in support of the plant's construction and operation.



Team Leader

USEC's American Centrifuge team is led by Senior Vice President Ron Green, a veteran of more than 50 power plant engineering and construction projects around the world, including 10 U.S. nuclear plants. Green brings a unique perspective to the centrifuge program, having helped develop the original Department of Energy design early in his career. Now, leading a team of engineers that includes several key

THE WORLD'S NUCLEAR POWER PLANTS

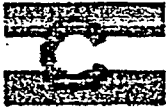
What?
step in
nuclear
uranium
U-238
useful
uses the
uses the

The fuel assemblies that power a nuclear reactor generally need uranium with up to 5% concentration of U-235. USEC produces the enriched uranium fuel, which is purchased by nuclear utilities to fuel their power plants. Enriched uranium is measured in "separative work units" or SWU. A typical reactor will run for one year on 100,000 SWU.

Construction/Operation

Upon successful demonstration of the American Centrifuge, USEC plans to construct and operate a commercial centrifuge plant in Piketon. The facility would provide enriched uranium fuel for nuclear plants worldwide and make a vital contribution to domestic energy security and national security. The commercial plant

EXHIBIT EE



U.S. Senator Ken Salazar
U.S. Senator Wayne Allard



For Immediate Release
July 25, 2005

CONTACT:
Cody Wertz
202-228-3630
Angela de Rocha
202-224-5944

SENATORS ALLARD, SALAZAR OFFER AMENDMENT TO RESOLVE ROCKY FLATS MINERAL RIGHTS ISSUE

WASHINGTON, D.C. – U.S. Senators Wayne Allard (R-Colorado) and Ken Salazar (D-Colorado) on Monday introduced an amendment to the FY 2006 Defense Authorization bill that will resolve the problem of mineral rights at the Rocky Flats Environmental Technology site so that the U.S. Fish and Wildlife Service's plans to create a national wildlife refuge at the site can move forward upon cleanup and closure of the site.

"The amendment we introduced today is the legislative culmination of 18 months of negotiation among the federal government, the State of Colorado and the mineral rights owners. It specifically excludes the option of condemnation, making it a fair and equitable settlement for both the government and private interests involved," Senator Allard said. "This is a win-win situation and will allow us to complete the transfer of responsibility for the site from the Department of Energy to the Department of the Interior (which oversees the U.S. Fish and Wildlife Service)."

"Securing the private mineral rights at Rocky Flats is an important step for the people of Colorado. We will forever protect the tall grass prairie at Rocky Flats from destruction by future mining operations, and we will preserve this precious habitat as a home for the wildlife of our State. And we will do this the right way, by making sure that mineral rights owners are compensated fairly and voluntarily," Senator Salazar said.

In 1997, Senator Allard successfully led effort in Congress to expedite the cleanup and closure of the Rocky Flats site, which resulted in moving back the closing date from 2070 to 2006.

In 2001, Congress enacted Senator Allard's legislation that creates the Rocky Flats National Wildlife Refuge. It requires the Department of Energy to transfer most of the Rocky Flats Environmental Technology Site to the Department of Interior for the purpose of creating a wildlife refuge to preserve Colorado's unique Front Range habitat once cleanup of the site is complete. This transfer has been delayed because of disagreements over privately-owned mineral rights.

Senator Salazar has worked for many years to clean the pollution at Rocky Flats and to bring to reality a wildlife refuge that will serve the people and the natural wildlife of Colorado forever. Senator Salazar served as a trustee of Colorado's natural resources when he was Colorado's Attorney General and when he was the Executive Director of

the Colorado Department of Health. He has worked very hard to combine the cleaned open space at Rocky Flats — the wildlife refuge — with the open space of the communities that surround it. This entire area will truly become one of Colorado's crown jewels — right in the midst of the heavily populated Front Range.

"The solution proposed in this amendment enjoys broad support, including the endorsement of Governor Bill Owens of Colorado, the Colorado Attorney General, and local officials at Rocky Flats," Senator Allard said.

Rocky Flats is owned by the U.S. Department of Energy (DOE) and manufactured components for nuclear weapons for the nation's defense until 1992. The current mission of the plant is closure — environmental cleanup, waste management and decommissioning — by December 2006. The industrial complex of more than 100 buildings is located in the center of about nine square miles of undeveloped land 16 miles northwest of downtown Denver. The final shipment of transuranic nuclear waste was shipped from the site in April of this year.

EXHIBIT FF

**UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD**

**Before the Administrative Law Judges:
Lawrence G. McDade, Chairman
Paul B. Abramson
Richard E. Wardwell**

_____)	Filed August 17, 2005
In the Matter of)	
)	
USEC Inc.)	Docket No. 70-7004
(American Centrifuge Plant))	
_____)	

**Declaration by Geoffrey Sea Regarding Department of Energy Semi-annual
Environmental Review Meeting and the DOE IG Report on USEC**

Under penalty of perjury, I the undersigned do declare as follows:

Statement of Qualifications

1. My name is Geoffrey Sea. I reside at the Barnes Home, 1832 Wakefield Mound Rd., in Piketon. I am contracted to write a historical and investigative book about Piketon, the Barnes family and the atomic reservation.

Purpose of Declaration

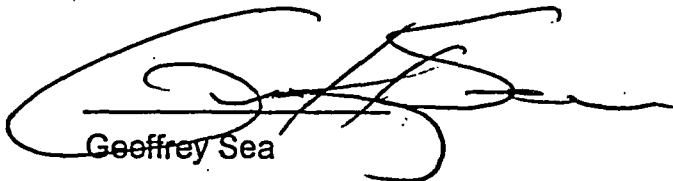
2. The purpose of this declaration is to attest to a brief question and answer exchange between Bill Murphie, director of DOE's Portsmouth-Paducah Projects Office, and myself. The exchange took place in public at DOE's Semi-annual Environmental Review Meeting held at the Ohio State University branch building in Piketon on July 14, 2005. To my knowledge, there is no transcript available for the meeting.

Description of Exchange

3. Twice a year, the Department of Energy (DOE) conducts a meeting open to the public and to media at which presentations are made on subjects of public interest, and questions are taken from the floor. Bill Murphie, director of the DOE field office that has jurisdiction over Piketon, presided at the meeting on July 14, 2005. During the question period, I first asked Mr. Murphie to comment generally on the Audit Report of the DOE Office of Inspector General that concluded in March of 2005 that DOE had improperly paid \$17 million in private USEC expenses at the Piketon site while preparing the site for the American Centrifuge Plant, with \$250 million similarly at risk. (The full audit report is attached as Exhibit A and is available at <http://www.ig.doe.gov/pdf/ig-0678.pdf>)

4. I asked Mr. Murphie to comment on this subject because the IG report seemed to be an exceptionally important event of great public interest that had happened since the last review meeting, and it had not been mentioned in the presentations. Mr. Murphie gave a general confirmation that the IG report had indeed come out and had concluded as I had summarized it. He then asked USEC's site manager, Dan Rogers, if he wanted to comment. Mr. Rogers said nothing audible to the rest of us in the room.

5. I then followed up with two direct questions to Bill Murphie: "Has USEC offered to reimburse DOE for those expenses? And has DOE sought to recover those costs from USEC?" Mr. Murphie then again asked Dan Rogers to comment, but Mr. Rogers again gave no audible reply. Mr. Murphie then said: "I think it is fair to say that USEC has made no offer to reimburse us." He then explained that he was soon headed to DOE headquarters in Washington, where decisions would be made about whether DOE would pursue action to recover the improperly paid costs.



Geoffrey Sea

August 15, 2005

EXHIBIT A



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Audit Report

Gas Centrifuge Enrichment Plant Cleanup Project at Portsmouth

DOE/IG-0678

March 2005



Department of Energy

Washington, DC 20585

March 10, 2005

MEMORANDUM FOR THE SECRETARY

FROM:

Greg Friedman
Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Audit Report on "Gas Centrifuge
Enrichment Plant Cleanup Project at Portsmouth"

BACKGROUND

In 1985, the Department of Energy (Department) ceased its efforts to develop gas centrifuge technology to enrich uranium. Prior to cancellation, more than \$2.5 billion had been spent on the program, including the construction of facilities to support a Gas Centrifuge Enrichment Plant (GCEP) at the Portsmouth Gaseous Diffusion Plant located in south central Ohio. When the project was cancelled, the gas centrifuge equipment was abandoned in place and the remainder of the facility was used for activities related to the Department's mission.

In June 2002, the Department and the United States Enrichment Corporation, Inc., (USEC) a private sector corporation, signed an agreement which, in part, pledged both parties to long-term commitments in the further development of gas centrifuge technology. USEC subsequently agreed to build and operate, at its own expense, an advanced uranium enrichment plant at the Portsmouth site, and the Department agreed to support USEC's program by accelerating the cleanup of the GCEP facilities. The Department estimated that the accelerated GCEP cleanup activities would have a total life-cycle cost of \$80 million. Because USEC and the Department have shared responsibilities for centrifuge program-related tasks, we initiated this audit to determine whether actions taken and costs incurred by the Department were in accordance with the agreement.

RESULTS OF AUDIT

The Department will spend at least \$17 million for activities that are not specifically related to accelerating cleanup at Portsmouth and may not be required by the Department/USEC agreement. This includes \$14 million to relocate certain necessary Department missions to other facilities simply to accommodate USEC's schedule for its advanced uranium enrichment plant. Similarly, although initial cleanup plans were to leave the Portsmouth centrifuge equipment in place until dismantlement, the Department has agreed to transfer the equipment to a temporary storage location at an additional cost of \$3 million, prior to dismantlement, again, in order to meet USEC's schedule. We



Printed with soy ink on recycled paper

found that the June 2002 agreement did not outline the specific costs to be borne by each party. As a result, we encountered a good deal of confusion as to the Department's responsibility for absorbing costs not directly related to accelerating cleanup at Portsmouth. In addition, we noted that a comprehensive baseline for the GCEP Cleanup Project had not been developed. We believe that without such a baseline, the Department risks making questionable expenditures in the future to support USEC's private sector, for-profit activities. For example, Department officials at the site anticipated further requests from USEC for additional commercial facilities that would cost the Department about \$16 million.

Funding GCEP activities that are not specifically necessary for cleanup, but which primarily benefit USEC's for-profit activities, diverts taxpayer provided resources that could be devoted to other pressing Department of Energy cleanup needs. Furthermore, such action appears to be inconsistent with Congressional guidance regarding development of advanced uranium enrichment technologies. Specifically, in February 2003, the House of Representatives conferees noted that USEC was moving forward with the development of such technology and encouraged the Department to offer its expertise, on a reimbursable basis, to support such private sector activities. The conference report went on to indicate, however, that this effort was best handled by the private sector and that the Department should focus its limited research resources on areas not adequately addressed by the private sector.

As previously identified in our audit on the *Cold Standby Program at the Portsmouth Gaseous Diffusion Plant* (DOE/IG-0634, December 2003), an absence of a clearly defined project scope is not unique to the GCEP Cleanup Project. However, we noted that, in the case of GCEP cleanup, the Office of Environmental Management (EM) had taken measures to better control project costs. These efforts included developing an integrated cost estimate, refining project technical requirements, negotiating costs with USEC, and increasing management oversight over initial work activities. In addition, EM stated that a baseline, which addresses many of the concerns raised in this report, had been prepared and is awaiting final approval. However, additional actions are necessary to ensure that costs incurred for cleanup efforts at Portsmouth are the Department's responsibility. In that connection, we recommended actions that, when completed, should help improve the Department's control of these costs.

MANAGEMENT REACTION

The Assistant Secretary for Environmental Management concurred with our recommendations and initiated corrective actions. Management's written comments also expressed concerns that the report did not recognize other Department initiatives, independent of the USEC agreement, which may have accelerated cleanup of the GCEP facilities. To account for these additional corporate objectives, EM suggested that we increase the scope of the first recommendation by proposing that the Department determine all of the activities necessary to meet the overall objective of preparing the GCEP facilities for future privately-funded reuse. In response, we broadened our audit recommendation to account for the Department's reuse policies, while ensuring only

necessary costs are incurred by the Department. Where appropriate, we modified our report in response to management's comments. Management's comments and our response are summarized beginning on page 4 of the report and are included in Appendix 3.

Attachment

**cc: Under Secretary for Energy, Science and Environment
Assistant Secretary for Environmental Management
Manager, Portsmouth/Paducah Project Office**

REPORT ON THE GAS CENTRIFUGE ENRICHMENT PLANT CLEANUP PROJECT AT PORTSMOUTH

TABLE OF CONTENTS

Gas Centrifuge Enrichment Plant Cleanup Project

Details of Finding	1
Recommendations and Comments	4

Appendices

1. Objective, Scope, and Methodology	6
2. Prior Audit Reports	7
3. Management Comments	8

GAS CENTRIFUGE ENRICHMENT PLANT CLEANUP PROJECT

GCEP Cleanup Project Plans

The Department's accelerated GCEP cleanup activities (GCEP Cleanup Project) included an estimated \$17 million for non-cleanup related activities that appear to be outside the scope of the agreement with USEC. Specifically, the Department plans to incur costs for actions taken to vacate GCEP facilities currently used for ongoing Departmental missions and for a change in the centrifuge machine dismantlement strategy to accommodate USEC's schedule.

Vacating Facilities

To comply with USEC's American Centrifuge Program plans, the transfer of certain GCEP facilities to USEC will require the Department to relocate missions and personnel housed in the facilities to other on-site locations. The Department originally intended to retain these facilities in support of on-site operations until the cleanup mission at the Portsmouth Gaseous Diffusion Plant (Portsmouth) was completed. To accommodate USEC, however, the Department now plans to spend \$14 million on this effort. In particular:

- The Department plans to spend \$5 million to relocate office space and maintenance shop missions. Relocation activities include moving personnel, office furniture, shop equipment, computers, and telephones. Before the relocations occur, the replacement office space, rest rooms, locker rooms, document storage areas, maintenance shops, training facilities, and laboratories will be repaired or renovated. Carpet, ceiling tiles, and lights will be replaced, interior surfaces painted, and fire alarm, sprinkler, and computer network systems will be inspected and modified, as needed.
- The Department also plans to spend almost \$9 million to vacate areas currently used for waste management and storage. These vacating activities include moving waste not yet ready for disposition to other locations, performing surface decontamination of the storage area, and negotiating Resource Conservation and Recovery Act (RCRA) closure certification. Program officials must then establish a replacement RCRA storage area and acquire office space for waste management operations elsewhere at

the site. Planned building repairs and modifications to the replacement storage area will include inspection and corrective maintenance on the electrical, plumbing, and communication systems, installation of a 10,000 square foot storage pad, as well as the negotiation of a new RCRA permit.

Dismantlement Strategy

The Department will also pay an estimated \$3 million to move centrifuge machines prior to their dismantlement in support of the American Centrifuge Program schedule. According to a USEC proposal, over 1,300 centrifuge machines and associated process piping, support equipment, and structures must be disassembled and removed to allow for construction and operation of its pilot plant, the Lead Cascade demonstration facility. Initial cleanup plans called for the machines to be stored in their current locations until they were ready for disassembly. However, after determining that the machines needed to be moved earlier to meet USEC's Lead Cascade construction milestone, the Department agreed to transfer the machines to a temporary storage location at a cost of \$3 million, pending dismantlement.

- In commenting on our draft report, management stated that the Department had made an earlier decision to aggressively explore how the workforce and facilities at the Portsmouth site could continue to serve the national interest, including making the GCEP facilities available for commercial reuse. As a result, the Department believes that, absent the agreement with USEC, making the facilities available for reuse would still mean completing most of the activities we characterized as avoidable.
- However, in our judgment, it is unlikely that the Department would have spent the \$5 million to relocate personnel and renovate additional facilities while they were still in use for mission-related activities. In addition, since the waste stored in the GCEP facility was scheduled to be removed by 2007, the \$9 million in additional waste management costs would have been largely unnecessary.

Agreement Execution

- Expenses beyond normal decontamination and decommissioning costs will be incurred because the June 2002 agreement between USEC and the Department did not provide detailed analyses clearly outlining the division of costs. In addition, the Department had not developed a comprehensive baseline for accelerated GCEP cleanup.

June 2002 Agreement

Although the June 2002 agreement with USEC indicated that the Department was to pay for normal decontamination and decommissioning costs, the agreement was not clear on the cost division for non-cleanup activities. Management stated that the Department developed a plan to clean up the GCEP facilities in 2000 when a Department-funded gas centrifuge plant was being considered. However, once the June 2002 agreement was made for USEC to deploy the centrifuge plant, the cleanup plans were not updated to identify which activities were considered normal decontamination and decommissioning and which were USEC's responsibility. As a result, the Department's project plans did not require USEC to pay for non-cleanup costs incurred during accelerated cleanup and facility transfer. Had specific cost responsibility for all activities been identified and appropriately assigned, non-cleanup costs incurred by the Department could have been avoided.

During our review, we held several discussions with site-level managers regarding the Department's obligations, as stated in the June 2002 agreement with USEC. These officials acknowledged that the costs we identified are inconsistent with the agreement but that the Department's unwritten policy had been to pay these costs. In support of their position, these program managers cited a press release and a budget submittal to illustrate their viewpoint. The budget document detailed the Department's intention to assume responsibility for the out-of-scope activities we identified, and these activities were subsequently funded through the Fiscal Year 2004 congressional appropriation. Program managers, however, agreed that a formal determination of the Department's cost responsibilities, under the June 2002 agreement, would be beneficial.

Project Baseline

The Department also had not implemented a project baseline to ensure that costs incurred were appropriate and in accordance with the agreement. A project baseline, against which project performance would be measured, is the primary instrument for controlling changes to the technical scope, cost, and schedule. While project cost estimates and schedules were prepared, a comprehensive programmatic baseline had not been developed more than two years after signing the agreement to accelerate cleanup at Portsmouth. According to the Office of Environmental

-
- Management, (EM) delays in formal baseline development were
 - due in part, to management transitions from the Oak Ridge
 - Operations Office to a new office in Lexington, Kentucky. EM stated that a comprehensive baseline had been prepared subsequent to the issuance of a draft of our report, and was awaiting final approval. In EM's view, this baseline, developed in response to our suggestions and as a result of the stabilization of GCEP facilities for reuse, should address many of the concerns voiced in this report.

Cost and Performance Impacts

- As discussed previously, the Department will incur up to
- \$17 million in non-cleanup costs during the early stages of the
- GCEP Cleanup Project. These costs include the \$14 million to
- relocate Department missions and the \$3 million attributable to
- changes in centrifuge machine dismantlement strategy. The
- Department is also at risk of increasing the project's life-cycle
- costs by incurring an additional \$16 million in non-cleanup costs
- for activities conducted in support of USEC's American Centrifuge
- Program. Specifically, the Department estimates that it may cost
- almost \$11 million for construction and relocation activities if
- USEC requests additional office space for its commercial
- operations. Similarly, the Department will likely pay about \$5
- million to move the GCEP facilities' central heating system since
- the main component of this system is located in space requested
- for USEC's full-scale American Centrifuge Plant.

RECOMMENDATIONS

To ensure that expenditures are limited to those cleanup costs for which the Department is specifically responsible, we recommend that the Assistant Secretary for EM require the Manager, Portsmouth/Paducah Project Office to:

1. Identify the activities necessary, based on Department policy and project requirements, to complete the GCEP Cleanup Project and formally assign responsibilities for costs to the appropriate party; and,
2. Develop a comprehensive baseline to carry out the Department's responsibilities for the GCEP Cleanup Project.

MANAGEMENT REACTION

- The Assistant Secretary for Environmental Management concurred with the recommendations, but suggested that they be
- modified to encompass the Department's corporate objective to
 - explore how the workforce and facilities at the Portsmouth site
 - could continue to serve the national interest. Specifically, the

-
- report did not recognize that the June 2002 agreement was part of
 - an objective to prepare the GCEP facilities for future privately-
 - funded use and an element of an overall approach aimed at
 - addressing the national challenge of stabilizing the domestic
 - nuclear fuel industry. The agreement set broad guidelines and did
 - not commit or specify activities necessary for GCEP cleanup.
 - Finally, management indicated that a comprehensive baseline, which takes into account many of the concerns voiced in our report, had been prepared.

**AUDITOR
COMMENTS**

Management's comments are responsive to our recommendations and the proposed corrective actions, when fully implemented, should improve management of the GCEP Cleanup Project and help improve the Department's control of costs. We acknowledged the Department's efforts in reusing the GCEP facilities and supporting the deployment of advanced enrichment capability. Therefore, we broadened our audit recommendation as suggested to account for the Department's reuse policies and added management's views to the body of the report where appropriate.

Appendix 1

OBJECTIVE	The objective of this audit was to determine whether actions taken and costs incurred by the Department were in accordance with the June 2002 agreement with the United States Enrichment Corporation, Inc.
SCOPE	We performed the audit from February 2 through September 30, 2004, at the Oak Ridge Operations Office in Oak Ridge, Tennessee; the Portsmouth/Paducah Project Office in Lexington, Kentucky; and, the Portsmouth Gaseous Diffusion Plant in south central Ohio. The scope of the audit included the Department's actual and planned GCEP Cleanup Project activities from 2002 through 2007.
METHODOLOGY	<p>To accomplish the audit objective, we:</p> <ul style="list-style-type: none">• Analyzed the June 17, 2002 agreement between the Department and USEC;• Discussed GCEP Cleanup Project activities with Department and contractor personnel;• Observed GCEP Cleanup Project activities being conducted at the Portsmouth Gaseous Diffusion Plant in Ohio;• Analyzed contractor proposals, work authorizations, and proposed baselines to determine the planned work and estimated costs;• Evaluated the Department's project management practices; and,• Reviewed applicable Federal regulations, Departmental orders, and implementing procedures and practices. <p>We conducted the audit according to generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. We did not rely on computer processed data to accomplish our audit objective.</p> <p>Finally, we assessed the Department's compliance with the Government Performance and Results Act of 1993. The Department did not establish specific performance measures related to the GCEP Cleanup Project.</p> <p>We held an exit conference with Environmental Management on March 2, 2005.</p>



Department of Energy

Washington, DC 20585

February 9, 2005

MEMORANDUM FOR GREGORY H. FRIEDMAN
INSPECTOR GENERAL

FROM: PAUL M. GOLAN
ACTING ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: MANAGEMENT REACTION ON DRAFT REPORT
"GAS CENTRIFUGE ENRICHMENT PLANT
CLEANUP PROJECT AT PORTSMOUTH"

Attached are the Office of Environmental Management's comments as requested in Mr. Rickey R. Hass' December 21, 2004, memorandum.

Management concurs with both the Inspector General's recommendations contained in the draft report, subject above. However, we suggest that the first recommendation encompass the Department of Energy's (DOE) corporate objective to explore how the workforce and facilities at the Portsmouth site could continue to serve the national interest, and not be limited by what was the narrower companion initiative that resulted in the June 17, 2002, DOE-United States Enrichment Corporation Memorandum of Agreement.

I appreciate the opportunity to review the draft report and to provide comments. If you have any questions, please contact me at (202) 586-7709 or Mr. William Murphie, Portsmouth Paducah Project Office Manager, at (859) 219-4000.

Attachment

cc: Susan Grant, ME-1
Merley Lewis, ME-1.1
William Murphie, PPPO



EXHIBIT 66

BARRON'S 15 August, 2005

(c) 2005 Dow Jones & Company, Inc.

"Losing Power: USEC (USU-NYSE)" by Spencer Jakab

SHARES OF NUCLEAR-FUEL COM-pany USEC dropped 11.3% on Aug. 4 as it swung to a loss of \$3 million from net income of \$7.4 million a year before.

Perhaps more worrisome to investors was news of a roughly six-month setback in the completion of the vaunted American Centrifuge Plant, a \$1.5 billion facility USEC (ticker: USU) hopes will be the most efficient center of its kind in the world for uranium enrichment. As we've reported ("Slow Decay," May 23), completion of the plant on budget and on time is key to USEC's viability.

"I think we're looking at the first of an incremental series of delays," says Ron Witzel, a principal with nuclear-fuel consultant Longenecker & Associates and a noted skeptic on the project.

USEC's management tried to put a positive spin on the ACP delay while remaining mum on the exact nature of the problem, citing secrecy requirements.

"I'm confident our people will continue to work through all the new issues as they arise," says CEO James Mellor. Independent experts recently gave the board a favorable evaluation of the technology's prospects, he adds, but he balked at identifying who had done the study. Director of investor relations Steven Wingfield, citing secrecy requirements, also refused to identify the experts.

A hedge-fund analyst who was already skeptical about ACP saw the announcement as a vindication. "It just seems that the people who are bulls assume this thing will get built very quickly and that there's no risk to the project," he says.

A shorter-term concern is the renegotiation of USEC's massive electricity contract next May. A rough calculation shows that a cost increase of just 19% would wipe out the entire gross margin from its core enrichment business; power prices in the area are 45% higher today than when the original deal was struck.

The big jump in costs highlights the urgency of completing the massive ACP as soon as possible. Until then, USEC must rely on a series of finite cash flows and is living on borrowed time.

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SPENCER JAKAB

BARRON'S 23 May 2005

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"Slow Decay" by Spencer Jakab

URANIUM has been a hot commodity, as forecasts of surging demand and tight supplies have sent some nuclear-energy stocks soaring. Among them is Bethesda, Md.-based USEC, a big nuclear-fuel enrichment company whose shares have more than doubled in the past year. USEC's high-tech pedigree and respectable dividend yield of 4.1% have garnered the enthusiasm of both retail investors as well as hedge funds seeking a transparent and liquid uranium investment.

While the outlook for uranium as a commodity is very bullish indeed, given the soaring prices of conventional fuels for electricity generation, the ability of USEC (ticker: USU) to cash in is far more limited than most investors believe. Moreover, the next few years will see many of the company's core profit centers shrink or vanish even as management makes a massive bet on a new, unproven technology -- large centrifuges -- that could make or break the company. Even if the project meets the company's expectations, the upside for shareholders looks paltry, considering the risks involved.

Much of USEC's current earnings stem from profit streams that are likely to dry up in future years. Meanwhile, its core enrichment business looks likely to lose market share. No wonder some analysts are scratching their heads about the shares' surge.

"A lot of their performance has been disappointing, to say the least," says David Schanzer, an analyst with Janney Montgomery Scott. "I don't understand what all the positives are in the story."

To be sure, nuclear power is on the cusp of a worldwide boom, especially in Asia. There are 25 reactors currently under construction, and China alone plans 40 in the next decade. Even the U.S. is beginning to flirt with its first new nuclear plants since the 1970s as electricity demand surges, and gas and coal prices soar. Indeed, some environmentalists are beginning to embrace nukes, the New York Times reported recently, because they provide an alternative to the burning of fossil fuels -- a culprit in many forms of air pollution.

As the only provider of uranium-enrichment services in the U.S. and a major supplier to Asia, USEC would seem at first glance to be well-positioned to benefit from the trend of increasing reliance on cheap atomic energy.

Uranium ore taken from the ground must be converted to uranium hexafluoride and then enriched to make it suitable for nuclear-plant fuel. This enrichment process is USEC's main line of work, and the standard measure of its output is called a separative work unit, or SWU.

With a 28% share of the global SWU market and plans to build the American Centrifuge Plant (ACP) -- touted as the most advanced facility in the world for enrichment -- in Piketon, Ohio, USEC is trying to establish its position as the leader in the field.

Unfortunately, however, enrichment's not a very profitable business for USEC, owing to outmoded technology. "They're not really generating any cash from their core business," says a hedge-fund analyst who is familiar with the company.

Citing confidentiality and the fact that the company competes with secretive, state-controlled entities, USEC won't break out the gross profit from enrichment from two other businesses believed to be far more profitable -- uranium sales and the resale of SWUs from Russia.

Stripping out the likely margin on uranium shows that the sale of SWUs brought just over 72% of revenues and nearly 70% of its gross margin last year.

But of the 10.7 million SWUs that USEC processes, over half come from a deal made with the Russians in the early 1990s to avert the dumping of cheap nuclear fuel globally. With most markets closed to them under the treaty through 2013, the Russians have been dismantling thousands of warheads and blending them down to fuel suitable for power plants for resale by USEC at a hefty markup.

The rest of USEC's SWU sales come from a massively energy-intensive process known as gaseous diffusion that dates back to the Manhattan Project. But its power contract ends next May, and its \$305 million in energy costs are likely to jump. "At this point in time, I'm not really able to comment on where the price will go," says Lisa Gordon-Hagerty, USEC's chief operating officer.

Paul Clegg, an analyst at Natexis Bleichroeder, estimates the company's current cost of just over \$26 per megawatt hour may jump to the low \$30s, based on the rise in power prices since 2000. Assuming \$31 and applying this to just the portion of their electricity bought under the fixed contract, this would translate into a \$49 million increase in their cost of goods sold for enrichment.

Enough is known about the terms of the Russian deal to estimate that it produced gross profits of roughly \$87 million. This means that only about \$48 million of gross profit was earned last year through enrichment. But that would be basically wiped out by the expected increase in power costs.

This is what makes the shift to the much less power-intensive centrifuge technology by the end of this decade critical for the company's survival. "If USEC doesn't transition to centrifuge, they're going to have a hard time remaining viable because of power costs," says Clegg.

The ACP is slated to cost \$1.5 billion -- a large infrastructure project by any measure and gargantuan for a company with less than \$24 million in earnings last year and \$1.2 billion in stock-market value. While most of USEC's competitors use centrifuges, ACP would use larger machines and thus would be cheaper to run, according to the company. But will it work? "No one knows at this point," says Ron Witzel, a principal with nuclear-fuel consulting company Longenecker & Associates.

ACP is far from the only game in town to boost global SWU output. Of the five major expansion projects around the globe, USEC's is the only one whose technology is highly risky, according to Witzel. "It's a technology that's yet to be proven," agrees Schanzer.

Referring to a recent presentation in which Witzel highlighted ACP's technical pitfalls, USEC's senior vice president Robert Van Namen says, "I think there was a bias there." Witzel's boss, John Longenecker, briefly ran USEC prior to its privatization.

But USEC's experience with another highly touted technology provides a cautionary tale. The AVLIS system, a technology that would have used lasers to

enrich uranium that was promoted as the company's future at the time of its 1998 initial public offering, turned out to be uneconomical.

Centrifuges that form the basis of ACP, on the other hand, are already used successfully by many of USEC's competitors. Even so, another advanced centrifuge project in Japan has turned out to be not commercially viable due to design flaws and frequent breakdowns. With ACP's huge up-front costs, unanticipated downtime could be devastating. "God knows what its availability factor will be. The efficacy has yet to be determined," warns Schanzer.

What's more, the returns are highly dependent on the future price of SWUs -- which most analysts expect to either stabilize or drop as more plants come onstream. Assuming the project is on time and on budget, it should be profitable at \$100 per SWU, about \$10 below the current price, and an availability factor of 90%. Using Clegg's cost estimates and assuming 60% debt financing, the project would generate about \$55 million in after-tax income for the \$600 million in shareholder equity, for a return on equity of 9.2% -- about what can be expected from a far less risky regulated utility.

With USEC's market share down by four percentage points from 32% two years ago, there are fears that an ambitious Russian nuclear industry may already be cutting into USEC's projected Asian sales.

Furthermore, a European consortium, Urenco, is building a competitive facility dubbed LES -- a \$1.3 billion centrifuge in New Mexico for completion around the same time as ACP. After that, USEC will no longer be the sole domestic enricher. "They could lose a significant amount of market share if LES gets built," says Schanzer.

China, with its massive expansion of nuclear power, is touted by USEC as a key market for ACP's output. Clegg isn't so sure, noting that Chinese statements on the issue suggest that they will try to keep their fuel cycle as domestic as possible, for security reasons.

But USEC is confident in the superiority of its technology, and bulls on the stock point to oodles of hidden value. Uranium sales, which provided about 22% of its gross profit last year on less than 16% of revenues, are one of the two cash cows that have kept the company profitable but will be exhausted by 2007. The bulk of USEC's uranium is from a stockpile given to it by the U.S. government at the time they were privatized. (Prior to its IPO, USEC was known as United States Enrichment Corp., a unit of the Department of Energy responsible for fuel enrichment.) That supply was so large that its dumping onto the market was single-handedly credited with depressing world prices through much of the 1990s. But most of it has now been pre-sold at prices that fail to reflect the recent appreciation.

Another source of uranium -- one gained from selective "underfeeding" of its enrichment process (essentially using more energy and less uranium to produce an enriched product when cheap power is available, and keeping the remainder) -- will also vanish soon.

"It was a nice little present in the stocking at the end of the year," says Clegg, who believes that utilities will take this profit opportunity back for themselves as contracts expire.

USEC's other cash cow is the lucrative Russian contract, which runs on through 2013, but is unlikely to be renewed. "It's very unclear what the Russians would like to do. This was a bit of a Faustian bargain for them at the time," says Clegg.

After 2013, the Russians may very well turn from being USEC's savior into its worst enemy. With the Russians currently able to sell SWUs into the world market at \$88 versus the long-term SWU price of \$110 (on which the assumptions for ACP are based), a resurgent Russian nuclear industry with several thousand warheads still left to dismantle in 2013 could wreck USEC's best-laid plans.

The third leg of USEC's "hidden value" is some \$740 million of SWUs that it has built up as inventory. "An investor should look at that as an important asset for the future," says Steven Wingfield, USEC's director of investor relations. Analysts say that many of the extra SWUs could only be monetized once the old gaseous-diffusion plant is shut down and if ACP gets up and running smoothly.

"I think it makes the most sense when you look at it from a liquidation standpoint," says Clegg.

Taken together, the roughly \$300 million in uranium, the \$500 million value of the remaining Russian contract and the excess SWUs add up to \$1.2 billion after net debt — just north of \$14 a share, close to the recent 13.24. But the company will need all of this, plus a further dollop of debt, to finance ACP in the next five years. As it is, USEC's earnings fail to cover the annual dividend of 55 cents a share that has attracted many retail investors.

Indeed, USEC may be worth much less as a going concern than the current sum of its parts. While hedge funds and retail investors are attracted by the glow of its breakup value, those with an eye beyond 2007 see USEC as radioactive.

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SPENCER JAKAB, a reporter with Dow Jones Newswires, covers the energy industries.

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

Docket No. 70-7004

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In the Matter of USEC Inc.(American Centrifuge Plant), Docket Number 70-7004.

Dear Honorable Judges,

USEC has filed a response to my letter of yesterday. I will reply regarding the substantive issues raised in USEC's response in my filings next Monday. The purpose of this letter is to address certain misstatements of fact in USEC's latest filing.

USEC claims that this is a second request for delay on the same issue, and that the request has already been denied by the Panel. The first request was made prior to a site visit to the GCEP Water Field. My understanding of the Panel's response was that, while the Panel understood the importance of the site visit by experts, it could not delay ruling on matters already pending with no actual date for a site visit in view. Now the circumstances are materially changed. A site visit by experts has been completed. Those experts have made findings critical to the deliberations of the Panel.

Specifically, the experts have positively identified a large earthwork of uncertain age at the GCEP Water Field site. In addition to the identification of important cultural resources on land intimately involved in the ACP project, the experts have also considered potential impacts of ACP on those resources, and a research protocol that should be implemented from this point forward in compliance with federal preservation law. All three subjects relate directly to my contentions, and the last also has direct implications for the Panel and the Commission in revising the schedule for the licensing proceedings. We simply need until Monday to file these findings in the form of a joint declaration by the experts.

USEC continues to try to confuse the issue by misidentifying the site in question and using vague terms like "many years ago." Just so we can all be clear: Construction of the gaseous diffusion plant started in 1952 and it included the acquisition of water fields approximately due west of the diffusion plant along the Scioto River.

When DOE wanted to build a centrifuge enrichment plant in the early 1980s on a site well south of the diffusion plant, the agency acquired a new water field along the river, due west of the new site. This is the GCEP Water Field in question. It was acquired in anticipation of a new centrifuge plant on the south part of the reservation, at a time when production at the diffusion plant was in decline.

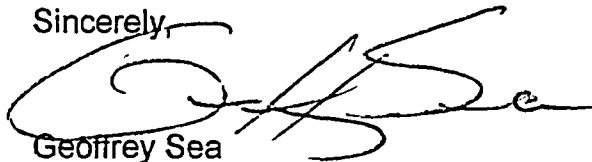
Impact of the ACP on earthworks at the GCEP Water Field is related only to water pumped at this field—not to all the water pumped from all the DOE fields. USEC's repeated assertions that overall water use for the entire reservation will not appreciably increase are completely irrelevant to the matter at hand. Of course water use by the diffusion plant has fallen as that plant no longer is in production. Correspondingly, water pumped from the GCEP Field will increase as ACP comes into production. Averaging it all out is just a way to pretend that nothing is changing.

USEC admits in its last filing that time has elapsed because of problems in communication between USEC, the DOE field office in Kentucky, and site representatives of USEC and DOE in Piketon. These are precisely the delays to which I referred. The August 5 date was indeed one that I requested, but only after three or four earlier requested dates passed during the time that DOE and USEC could not agree between themselves on conditions for the visit. The seven month delay between December 2004 and July 2005 to which USEC refers was imposed by DOE, not by me.

Finally, USEC asserts that I have "no right" to a site visit—a strange position to take after a visit has been completed and experts have made positive findings. These proceedings, while important, are not the only governing legal basis for a site visit. Culture resource professionals have an absolute right of access to threatened cultural resources for study under provisions of the National Historic Preservation Act. That was the right asserted and that is what has now occurred. Access in the future will be necessary and is guaranteed by NHPA.

Thank you for your consideration.

Sincerely,



Geoffrey Sea

Dated August 11, 2005

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